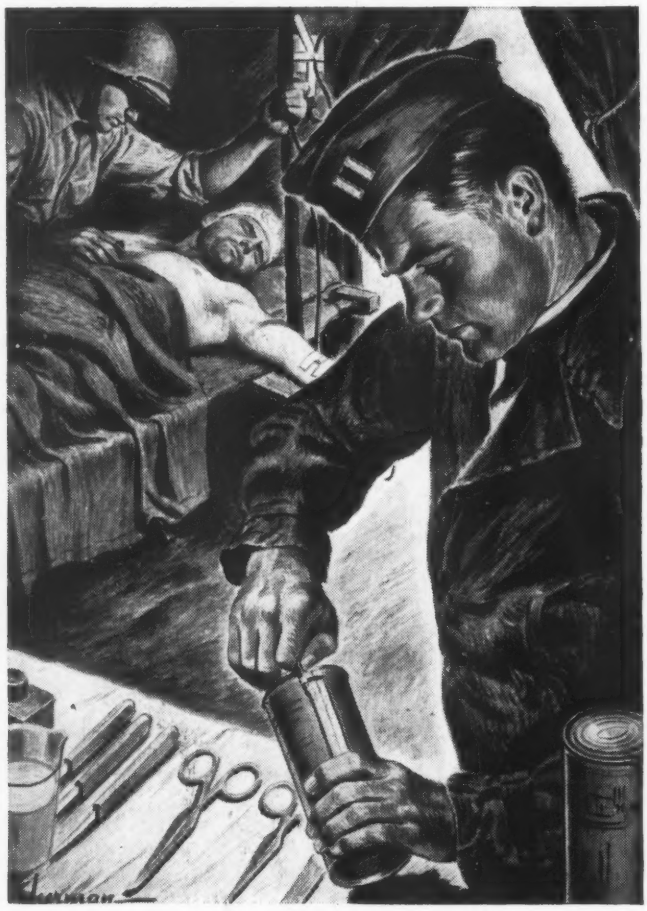
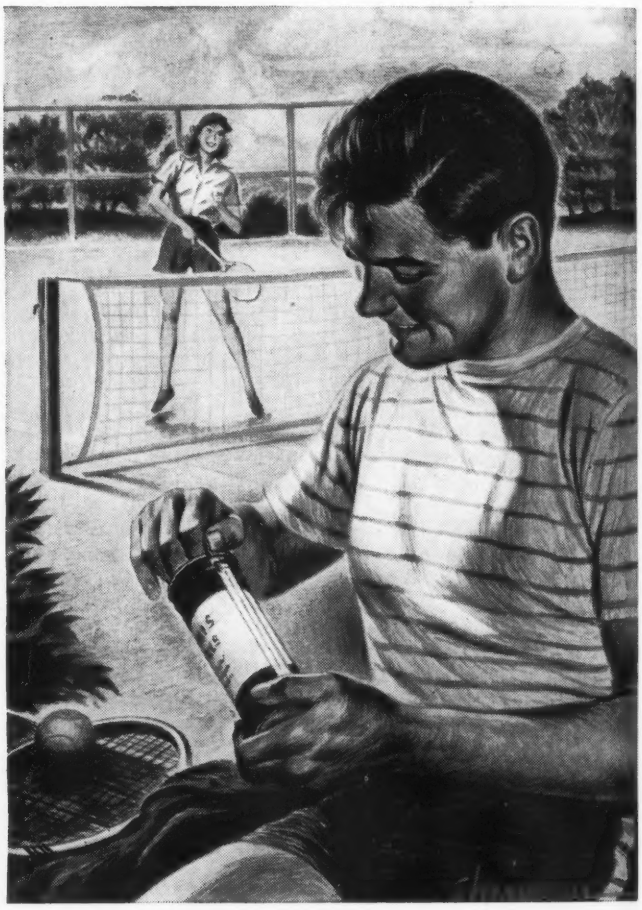
# MODERN PACKAGING

NOVEMBER 1944

# RECONVERSION: no problem here





**OUT** of the container in the first picture, the doc is taking a blood plasma transfusion kit.

Out of the container in the other picture, a kid is about to remove some tennis balls.

And, while a lot of territory separates lifesaving blood plasma and a pleasant afternoon batting a ball about, the two situations have one thing in common—the containers pictured.

**They are similar.**

Either can be made on the same can-manufacturing lines.

This setup is typical of many war items now being made by American Can Company. They will continue to be made until reconversion comes.

But when it does come, changing over from war to peacetime manufacture presents virtually no retooling problem to us . . . just a twist of our mechanical wrist. For you also this is good news.

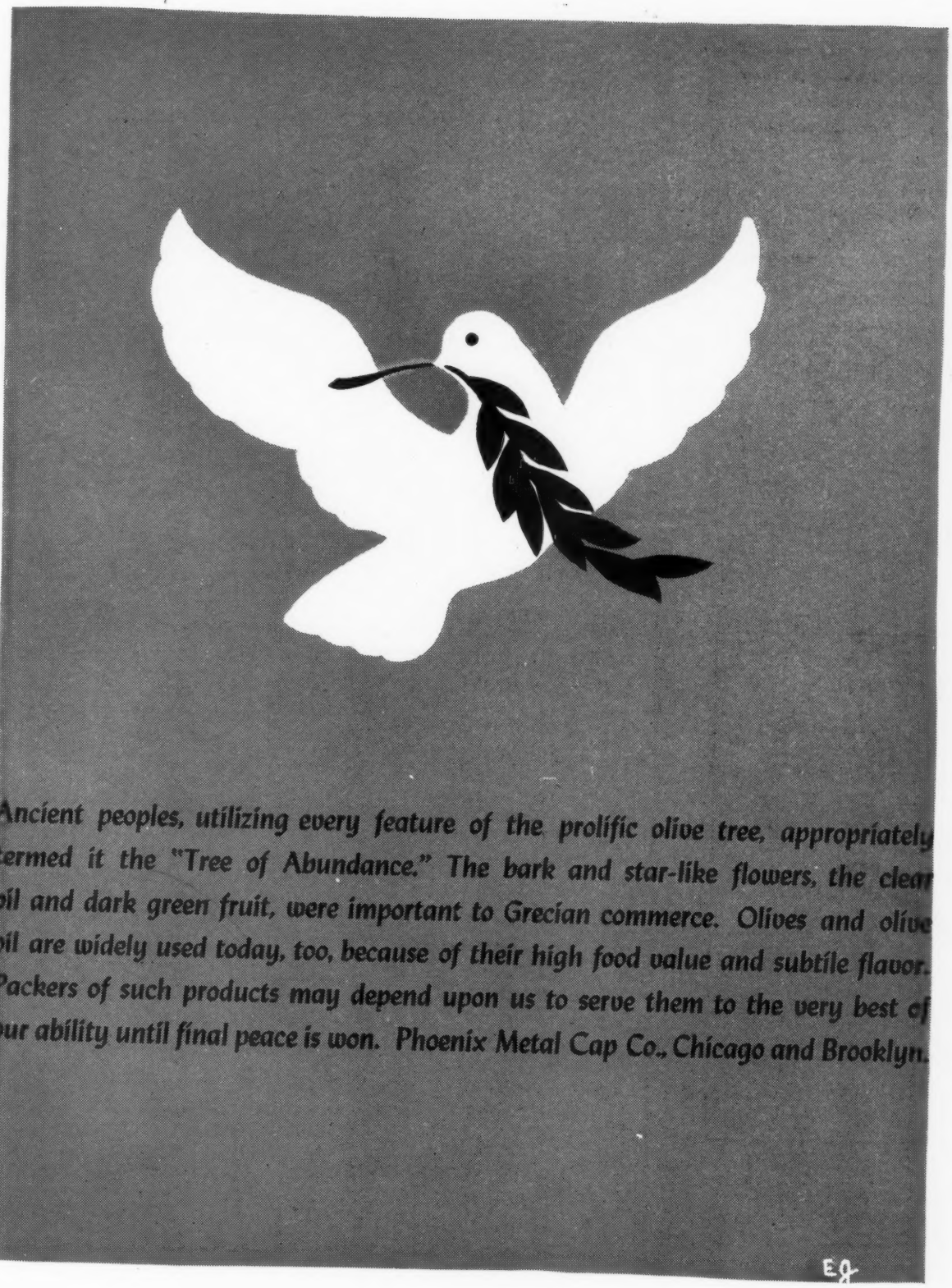
It means that you should be able to get delivery from us on your peacetime packages in record time.

**If you will consult us now** and lay your postwar plans, you'll be ready to roll when Peace gives everyone the green light.


AMERICAN CAN COMPANY

230 PARK AVENUE

NEW YORK 17, N. Y.



*Ancient peoples, utilizing every feature of the prolific olive tree, appropriately termed it the "Tree of Abundance." The bark and star-like flowers, the clear oil and dark green fruit, were important to Grecian commerce. Olives and olive oil are widely used today, too, because of their high food value and subtile flavor. Packers of such products may depend upon us to serve them to the very best of our ability until final peace is won. Phoenix Metal Cap Co., Chicago and Brooklyn.*

# MODERN PACKAGING

**VOLUME 18** **NOVEMBER 1944** **NUMBER 3**



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## THIS MONTH

Again, in a special section, we bring you a summary of the proceedings of the Packaging Institute Conference only a few days after the close of the meeting, held November 1 and 2 in New York City. Fast work by our editors, artists, engravers, printers and binders made this possible. Technical reports of significance presented at the conference will be printed in full in our December issue.

**All editorial contents bearing on military subjects have been approved for publication by the Armed Services.**


MODERN PACKAGING is regularly indexed in the *Industrial Arts Index.*


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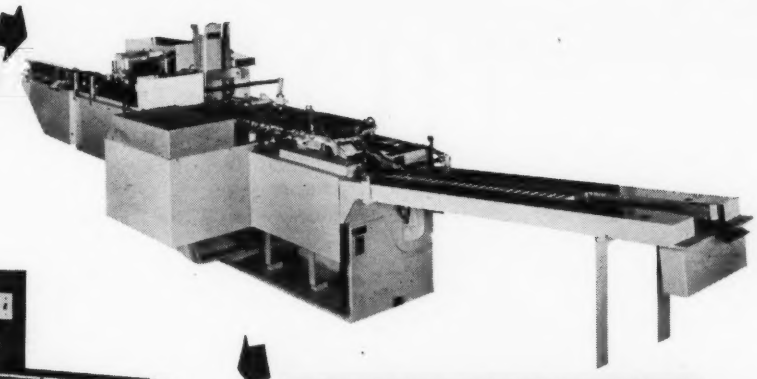
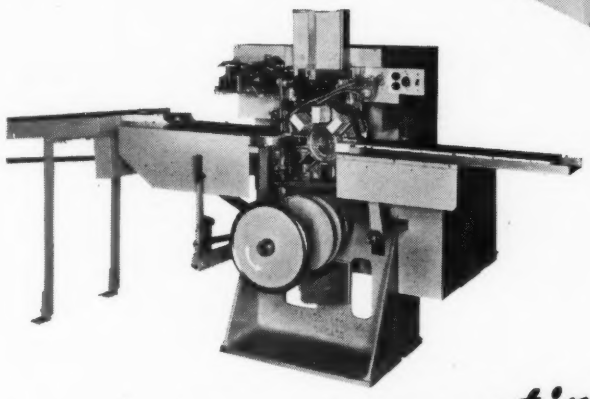
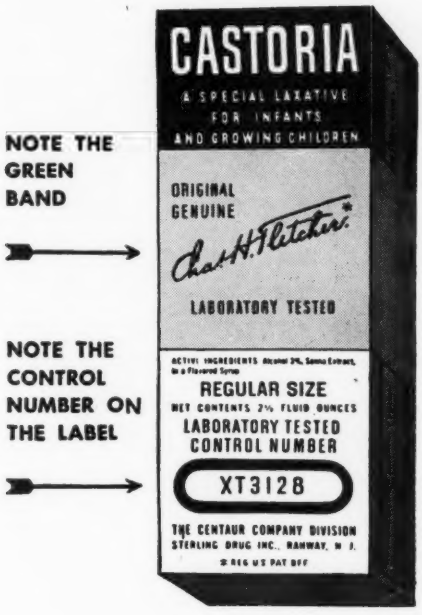
# CARTONED on a Redington





# BANDED on a Redington

## ...to help *dramatize* Fletcher's CASTORIA "QUALITY-CONTROL"




FLETCHER'S CASTORIA provides a good example of the way in which packaging can be used to inform the public of new or changed production. In their case the package was employed to verify for the consumer the *exhaustive tests and controls* which the product undergoes to assure its potency, purity and safety. *One:* the band around the package that was so well known for years was changed in color to identify late production. *Two:* the bottle carries a "quality control" number on its label that is *plainly visible* through a window on the new carton.

Redington Machines have packaged this famous remedy for many years. Their latest equipment consists of a standard Type 24 Redington Cartoning Machine *plus* a specially designed Banding Machine.

The Cartoning Machine takes bottles *directly* from the labeler standing upright on intake conveyor belt. Bottles are gradually lowered into pockets of the article conveyor. A circular is fed from magazine, *folded twice* parallel to the long dimension and placed *over top of bottle* from front to back. The carton is fed from magazine, expanded, bottle with circular inserted, and carton closed by gluing the end flaps. The *directly connected* Banding Machine receives packages, feeds bands from magazine, applies glue, and places a band around carton.

*Another example* of Redington ability, not only to supply high-speed, efficient Cartoning equipment, but also to supply *special* additional equipment needed to complete packaging lines.

**F. B. REDINGTON CO. (Est. 1897) 110-112 So. Sangamon St., Chicago 7, Ill.**

*For Freedom's Sake — Buy War Bonds*

# REDINGTON

## PACKAGING MACHINES

**FOR CARTONING • WRAPPING • SPECIAL PACKAGING**

# THANKS

## *For the Lessons We've Learned From Your Past Experiences!*

Experience is a great teacher . . . especially in business. We, of the Sefton Fibre Can Co., have profited by the experiences that we have had with your packaging problems and are thankful for the lessons we have learned. They've taught us ways of improving your packages and are the basis of Sefton's Package of Tomorrow. Build your post-war plans around it!

SEFTON

**FIBRE CAN COMPANY**

ST. LOUIS ····· NEW ORLEANS

DISTRICT OFFICES. Los Angeles San Francisco Denver Tampa Chicago Des Moines New Orleans Boston Detroit Kansas City St. Paul Omaha New York Cincinnati Cleveland Oklahoma City Pittsburgh Memphis Nashville Dallas Houston Salt Lake City Seattle

# SEWING A SEAM IN Geon— WITH ELECTRIC HEAT

## With Geon it's the *combination* of properties that counts

THE girl in the picture is demonstrating just one important property of GEON—heat sealing. This relatively new method of sealing has wide applications in many fields—textile, plastics, packaging, to name three important ones.

But heat sealing alone may not answer your problem. That's why we say, *with GEON it's the combination of properties that counts.*

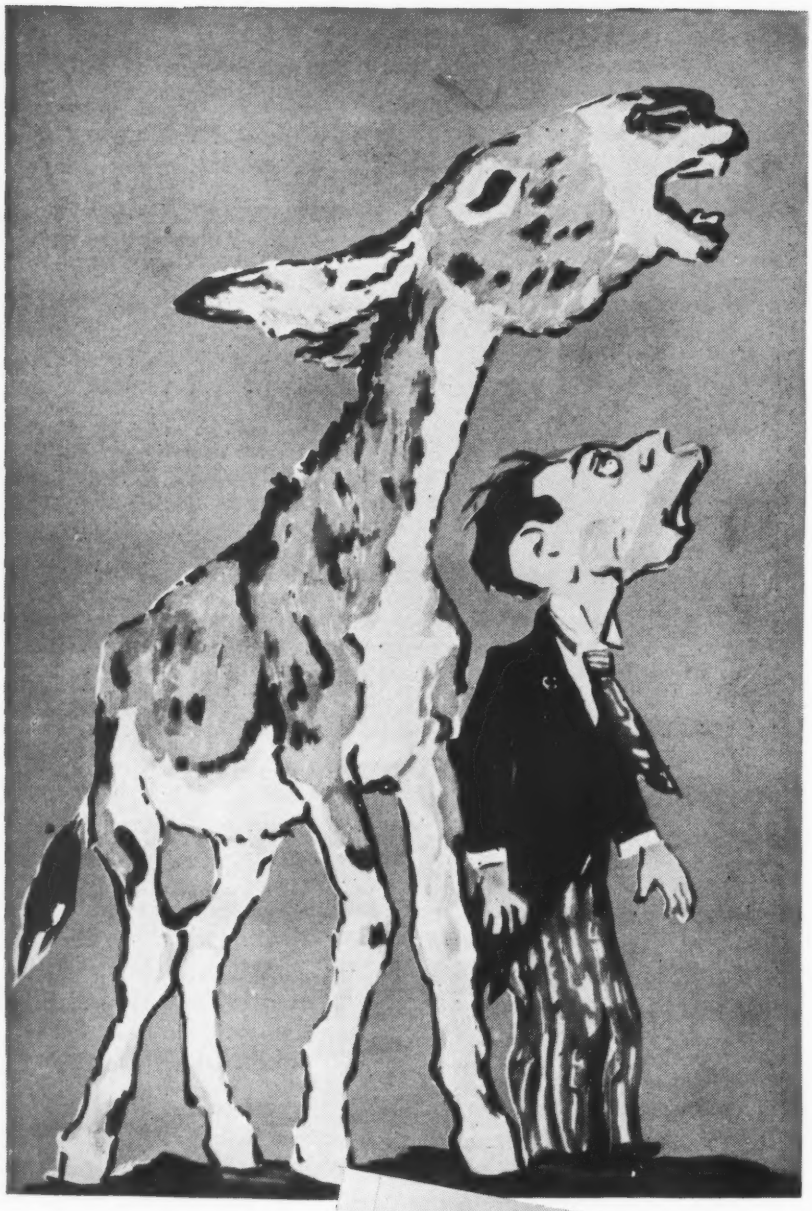
What other characteristics do you need in your coated fabric or paper, your film or sheet? Here are a few of GEON's outstanding properties that can be had in a wide variety of combinations: resistance to oil, grease, fats, acids, alkalies, foods, light, air, aging, wear, abrasion, water, heat, cold, cracking, mildew and creasing. GEON materials may be flexible, light weight, odorless, tasteless. They can be made in a wide range of attractive colors.

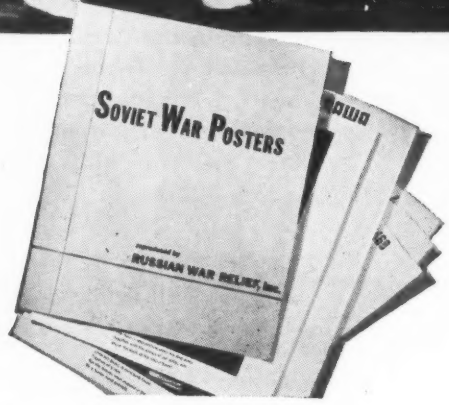
Does this suggest some application for GEON in your business? Right now the use of GEON is subject to allocation by the War Production Board. Our development staff and laboratory facilities are available to help you work out any special problems or applications. For more complete information write Department L-6, Chemical Division, The B. F. Goodrich Co., 324 Rose Building, E. Ninth and Prospect, Cleveland 15, Ohio.

Geon
*Vinyl Resins & Plastics*

**CHEMICAL DIVISION**
**THE B. F. GOODRICH COMPANY**
ROSE BUILDING, E. NINTH & PROSPECT, CLEVELAND 15, OHIO

# "WHICH IS WHICH? WHO CAN SAY— THERE IS NO DIFFERENCE IN THEIR BRAY"






THIS summer one of our minor but more pleasant chores was the production of a portfolio of posters for Russian War Relief. Some of the posters are childishly simple, others timelessly sophisticated. But all assert anew that good art is adequate advertisement without text . . . will prove stimulating and suggestive to anybody who works with advertising.

These posters evoked so much interest in our shop, among artists, art directors and advertisers that we feel privileged to call your attention to this portfolio, issues of which are still available at, and worth all of $1.75. Order directly from Russian War Relief, 11 East 35th Street, New York 16, New York.

The posters will not only augment both your understanding and appreciation of the Russian people . . . but may do ditto for Einson-Freeman as lithographers of large abilities and liberal scope, expert in turning graphic art into effective display media.

**EINSON-FREEMAN CO., INC.**

***• Occasionally Arty Lithographers***

STARR & BORDEN AVENUES, LONG ISLAND CITY, NEW YORK

# They Know What They're Fighting For*

**Excerpts from a statement by a high-ranking officer in the U. S. Army****

"It is well to pause in this hour of severe trial... to take stock of ourselves and of our institutions, so that we may build up an immunity for the future against the unsound, selfish, grasping philosophy that has brought civilization so close to the verge of destruction.

"We can find our inspiration to build better for the future in the exploits of our fighting men -- in the deeds of the Kellys and the Levins, the Romanoffs and the Carusos, the Kim Loos and the Damoos -- all to be found in the same fox holes, airplanes and trenches, fighting the common enemy, together as one man.

"They are Americans all of them -- men of good will fighting side by side -- Jews, Protestants, Catholics, Mohammedans, Hindus, Buddhists -- fearless and strong in the faith of their fathers. None asks the other who he is or what he is. It is sufficient that they are there fighting for each other, for the things in which they believe, for the same America and the same way of life they all love."

** Publication of name contrary to War Department policy.*

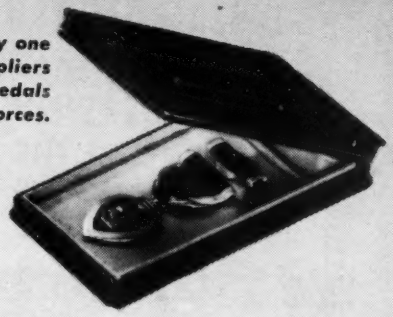
**BONDS FOR LETTERS!**

**TWO $25.00 WAR BONDS WILL BE AWARDED EVERY MONTH FOR EACH LETTER PUBLISHED.**

Have you received a letter from a serviceman illustrating the spirit of cooperation and understanding which unifies America's fighting men of all faiths, races, backgrounds? If so, send it to Arrow Mfg. Co. You and the writer will *each* receive a $25.00 War Bond if letter is accepted for publication. All letters will be returned.

*** ONE OF A SERIES OF ACTUAL STATEMENTS FROM MEN WITH THE ARMED FORCES, EXPRESSING THE DEMOCRATIC IDEAL—A POWERFUL WEAPON IN WAR, A PROMISE OF ENDURING PEACE FOR ALL MANKIND.**

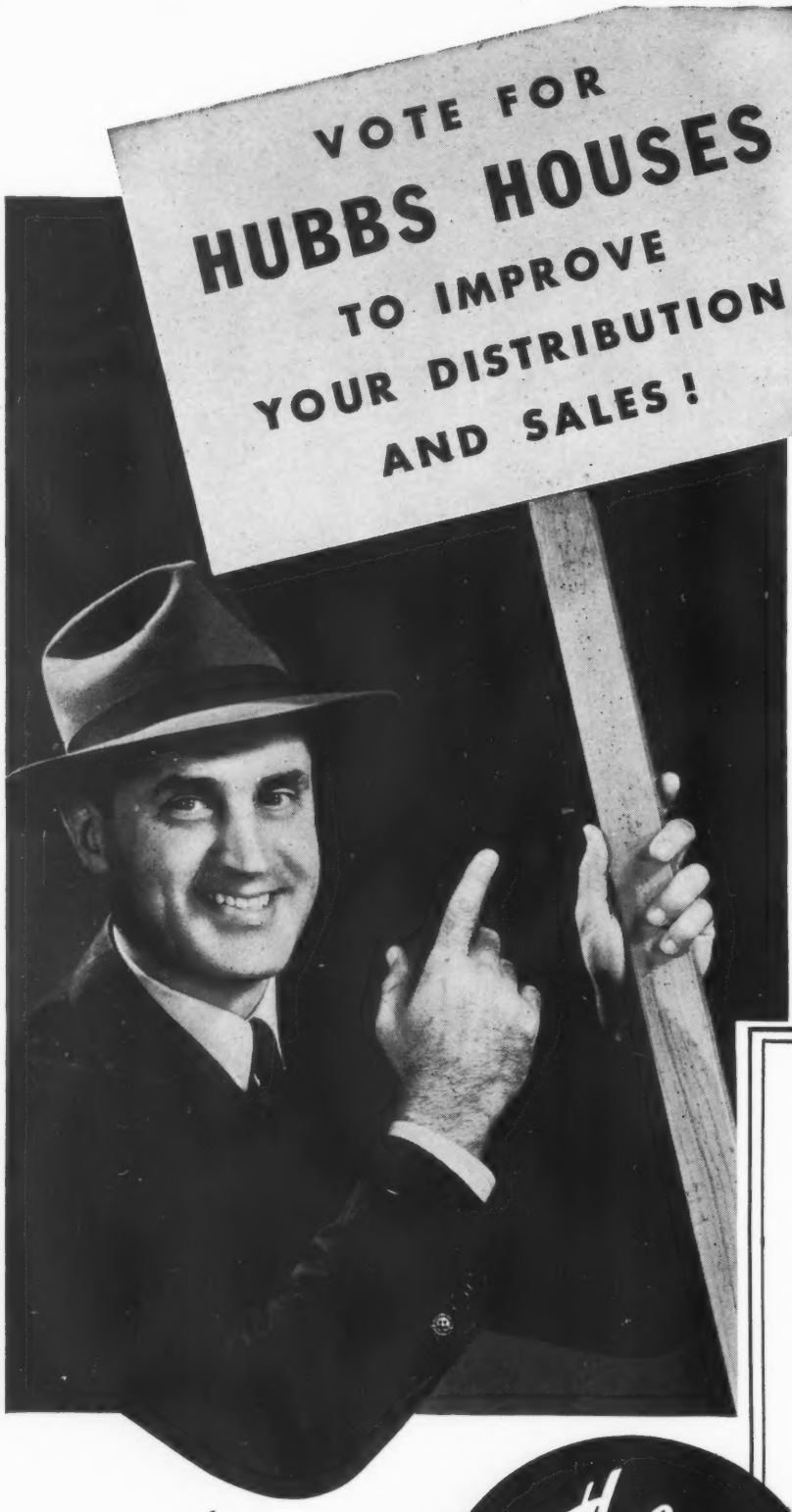
*Arrow is proud that it is today one of the country's largest suppliers of the boxes which hold the medals for the heroes in our Armed Forces.*



**Arrow**

**BOXES AND DISPLAYS**

**ARROW MANUFACTURING COMPANY, INC., FIFTEENTH AND HUDSON STREETS, HOBOKEN, NEW JERSEY**




*Get*

**MORE BUSINESS**

**IN AMERICA'S**

**NO. 1 MARKET**

In reviewing your sales set-up for the post-war era . . . are you interested in (1) stronger sales representation, (2) frequent personal calls on the leading buyers, (3) saving the expense and delays of recruiting and training new salesmen, (4) lower distribution costs and (5) well-located warehouse facilities?

If so, investigate the *complete marketing service* we offer, from Indiana eastward. With our set-up, you get action at once!

*for a*

**DISTRIBUTORSHIP**

*that means*

**LEADERSHIP**

CONTACT THE HUBBS HOUSE NEAREST YOU

*The* **HUBBS HOUSES**

**ESTABLISHED IN 1855**

**THE HUBBS HOUSES**

**CHARLES F. HUBBS & COMPANY**
Lafayette Street Warehouse
Beekman Street Warehouse
NEW YORK, N. Y.

**HUBBS & CORNING COMPANY**
BALTIMORE, MD.

**HUBBS & HOWE COMPANY**
BUFFALO, NEW YORK

**HUBBS & HASTINGS PAPER CO.**
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**CHARLES F. HUBBS & COMPANY**
BRIDGEPORT, CONN.

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**HUBBS & HOWE COMPANY**
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TROY, NEW YORK

**and in Canada**

**VICTORIA PAPER & TWINE CO., LTD.**
TORONTO

**VICTORIA PAPER & TWINE CO., LTD.**
MONTREAL

**VICTORIA PAPER & TWINE CO., LTD.**
HALIFAX

**GARDEN CITY PAPER MILLS CO., LTD.**
ST. CATHARINES ONT

**CANADIAN VEGETABLE PARCHMENT PAPER CO., LTD.**
MERRITTON, ONT.

# PUT R INTO EVERY MONTH FOR OYSTERS

## *by quick-freezing in* Pliofilm

SEA-FRESH, delicious oysters will be served even in the R-less summer months, after victory. Tests prove that prime oysters, when quick-frozen in durable and transparent Pliofilm, retain their delicate flavor and freshness for many months.

Pliofilm packaging advantages make *not only oysters but many other liquid-packed foods quick-freeze possibilities.*

Pliofilm is proof to moisture and vapor, and its resistance to dehydration increases at low temperature.

Pliofilm can be plasticized for extra strength at low temperatures, reducing need for other wrapping. Another economy feature is its heat-sealability — it makes its own moisture-vapor-proof closure one of high tensile strength. Pliofilm can be adapted to existing packaging machinery.

Pliofilm shows the high quality of your pack, because it is crystal clear in its transparency.

All the Pliofilm that Goodyear can produce now goes to war. But, with peace, this tremendously increased production of Pliofilm will be available for frozen-food packaging. Get the full story now. Write to Pliofilm Sales Dept., Goodyear, Akron 16, Ohio.

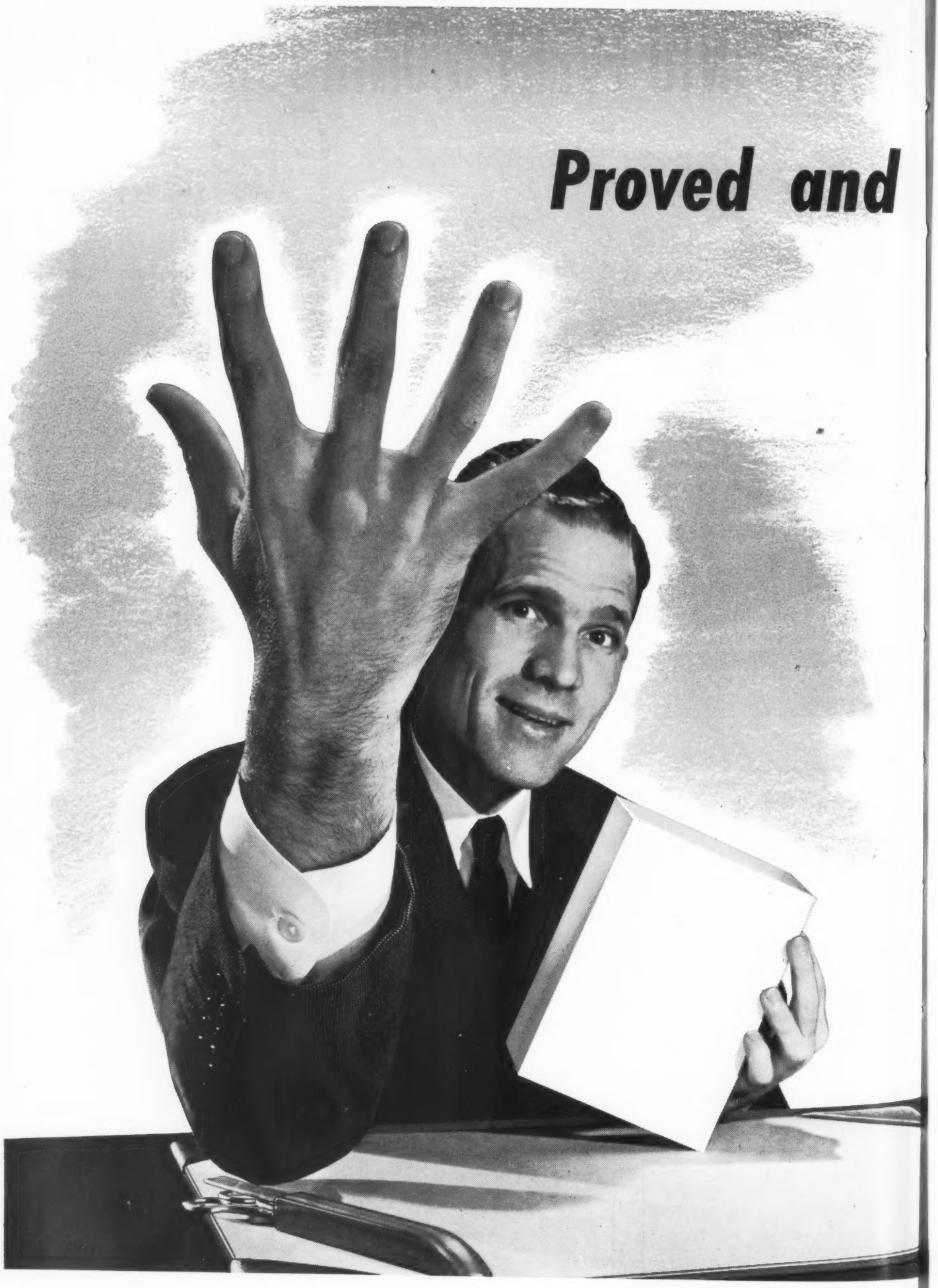
**LOCKER PLANTS**—Be ready to supply Pliofilm bags and sheets to your clientele. Pliofilm insures better results and is more economical because it can be re-used.

GOODYEAR
THE GREATEST NAME IN RUBBER

Pliofilm
A PRODUCT OF GOODYEAR RESEARCH

Pliofilm—T.M. The Goodyear Tire & Rubber Company

BUY WAR BONDS—BUY FOR KEEPS


Proved and

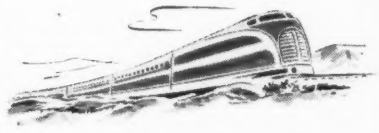
# Improved for FIVE YEARS

## *Coated Lithwite*

**You'll get the refinements developed over a period of five years when you switch to *Coated* Lithwite folding cartons after the war**

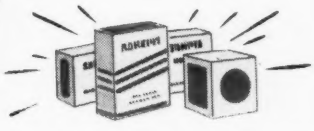
Five years ago, *Coated* Lithwite was the talk of the folding carton industry—the first boxboard formed, made and coated in one continuous operation on one machine. And it's still the talk of the industry. For *Coated* Lithwite hasn't been satisfied to be just the *first* one-process coated boxboard. It has been continuously improved and refined . . . *to enlarge its margin of quality leadership.*

Right now, we have to say "sorry" to requests for *Coated* Lithwite. But, one day, that will be changed. And when that day comes, you'll find constantly improved *Coated* Lithwite farther than ever out in front . . . ready to put its brilliance, its smarter appearance, its five years of experienced salesmaking around your product.



**STREAMLINED PRODUCTION.** A minute and a half—that's all the time it takes to process Coated Lithwite from pulp to finished, coated stock . . . on one machine, in one continuous, high-speed operation.

**UNUSUAL BRIGHTNESS.** Coated Lithwite's surface is so uniform, so white, so hard, so free from chalkiness, that inks stand up brilliantly, halftones and type print with finer definition of detail.



**PRECISION FOLDING.** Fewer jam-ups in today's high-speed, automatic filling machines with Coated Lithwite. It folds and scores accurately without flaking or shattering, takes a positive, tight seal.

# The GARDNER-RICHARDSON Co.

**Manufacturers of Folding Cartons and Boxboard**

**MIDDLETOWN, OHIO**

Sales Representatives in Principal Cities: PHILADELPHIA • CLEVELAND • CHICAGO • ST. LOUIS • NEW YORK • BOSTON • PITTSBURGH • DETROIT

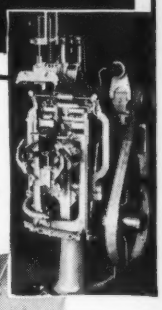
*Bottles, Jars, Jugs, Ampoules, Vials, Pints, Quarts, Gallons,*

*Body Labels, Front and Back Labels, Neck Labels, All 'Round Labels, Foil,*

*Semi-Automatic, Full Automatic, Rotary, Straightaway, Turret.*

# HOW TO CHOOSE THE BEST LABELER IN THE *WORLD*

## *for your particular Container and Label set-up*

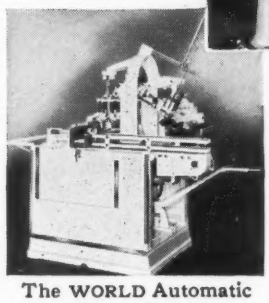


The WORLD Model S Semi-Automatic Labeler

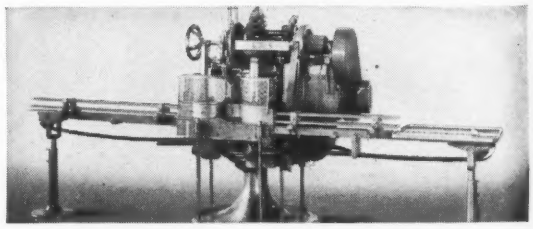
There are all kinds of Labelers for all kinds of labeling jobs and all kinds and sizes of containers. What's one packager's meat may be another packager's poison.

Isn't it good common sense to place your particular labeling problem in the hands of WORLD labeling headquarters—the only builders of Labelers that make the complete range, and can therefore make recommendations that are entirely unprejudiced.

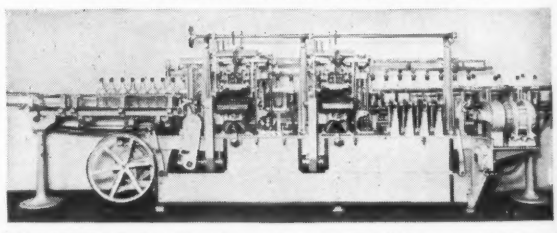
There's nothing difficult about planning, now, to get the best labeling in the WORLD. We'll gladly work it out for you, given a few facts about your production, your containers and your labels. Why not get this part of your planning job cleaned up? Simply get in touch with



The WORLD Automatic TURRET Labeler



The WORLD Automatic ROTARY Labeler



The WORLD Automatic BEE-LINE Straightaway Labeler

WORLD LABELERS

## ECONOMIC MACHINERY COMPANY

*Builders of World Automatic and Semi-Automatic Labelers for Every Purpose*

**Worcester, Massachusetts**

NEW YORK PHILADELPHIA PITTSBURGH CHICAGO SAN FRANCISCO DENVER LOUISVILLE
SALT LAKE CITY EL PASO SEATTLE PORTLAND LONDON MONTREAL TORONTO WINNIPEG
SPOKANE VANCOUVER SYDNEY, AUSTRALIA WELLINGTON, N. Z. SAN JUAN, P. R.

# Lumarith* Plastics

U.S. GOVT. EMERGENCY FISHING KIT
INSTRUCTIONS
TAKE CARE OF ALL HOOKS AND LINES.
CUT A FISH POLE.
THE SPINNERS MAY BE USED IN COMBINATION
WITH THE FLIES OR THE FLY CAN BE
REPLACED WITH A PLAIN HOOK. WHEN USING THE
SPINNERS WITH PLAIN HOOK, BAIT WITH
INSECTS, GRUBS, BUGS OR WORMS.
DIG BUGS AND WORMS OUT OF BOTTOM OF
LOGS AND STONES. LOOK FOR WORMS
INSECTS UNDER STONES.
ALWAYS COOK ALL FISH TAKEN FROM FRESH
WATER. EITHER ROAST THEM ON A POINTED
STICK OR PEEL STONE OR BAKE IN CLAY.
BOILED OR BAKED IN CLAY.
ALL THE FISH YOU CATCH (EVEN MINNOWS)
ARE GOOD TO EAT EXCEPT ONE. THAT ONE
IS THE PUFFER FISH, WHICH AS SOON AS
CAUGHT SWELLS UP LIKE A SMALL FOOTBALL.
THE PUFFER FISH IS POISONOUS.
DO NOT EAT IT.

*Credit to Edw. K. Tryon, Philadelphia, makers of King Fisher Tackle, who designed and filled the case.*

## Hope Chest for a Hero!

NEARLY EVERY TYPE of fish makes a safe meal . . . that's why the *downed* flyer equipped with a U. S. Government Emergency Fishing Kit has a good chance to eat regularly while he waits out rescue.

The Kit, molded of transparent Lumarith plastics and sealed with Lumarith-backed pressure-sensitive tape, is good packaging. It contains a variety of tackle and bait, salt for seasoning, and even a plastic lens for starting a fire. Complete instructions are an integral part of the plastic container where they can't be lost or destroyed. The kit is moisture, mold and fungi proof, and tough.

Here is one more piece of evidence that scientific packaging is not in the *dream stage*—awaiting a postwar birth. It is a reality *right now* with millions of fighting Americans all over the globe who are getting their food, drugs and equipment in packages which contribute to the function and application of the contents. It remains for the packaging industry to convert this progress to civilian business.

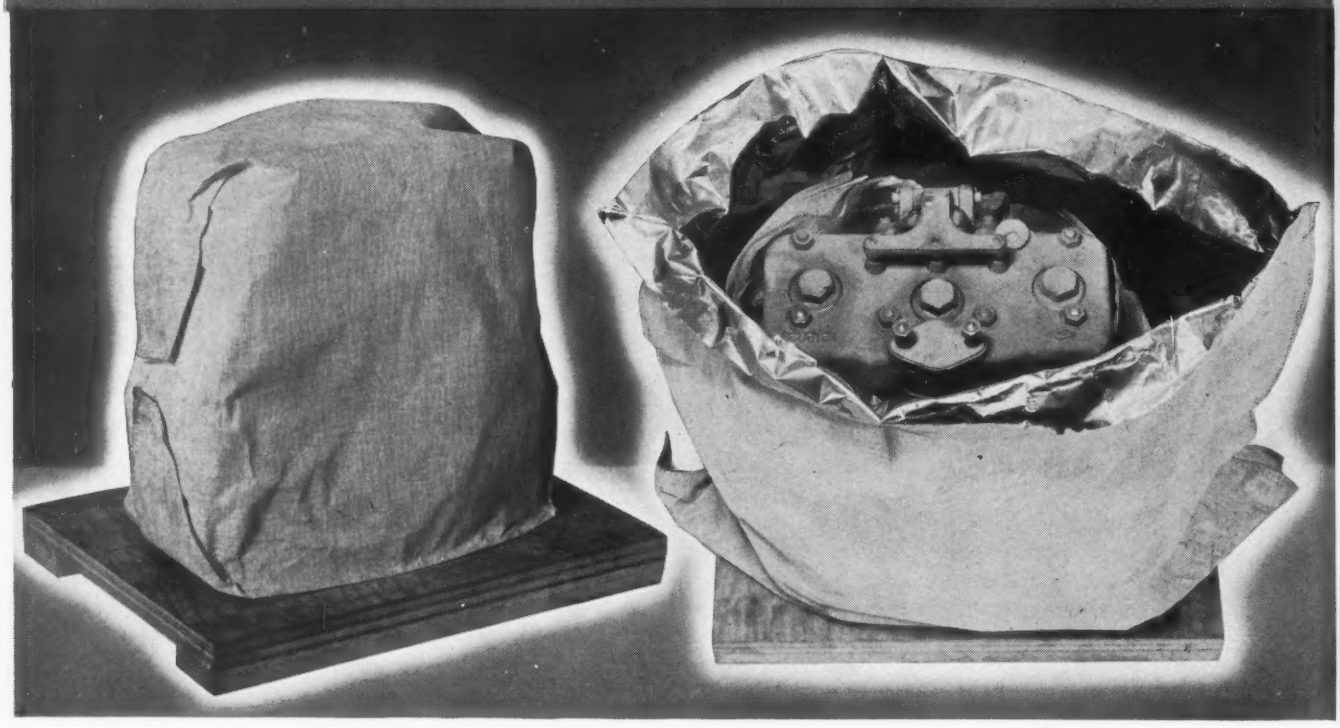
The research and analysis required for the filming of the Celanese packaging movie "PROVING GROUND" should be of great value to you in your postwar planning. Write the Technical Service Department of Celanese Celluloid Corporation, a *division of Celanese Corporation of America*, 180 Madison Avenue, New York City 16.

Reg. U. S. Pat. Off

*A Celanese* Plastic*

## A NEW "HIGH" IN

# Packaging Perfection . . .



"PERFECTION! . . . There's the biggest, most important word in the vocabulary of our Air Forces. And no wonder! Up there in the infinite yonder, where flying men fight, there's no time for compromise. Anything less than perfection—human and mechanical—spells certain *Disaster!* . . . for plane and for crew.

One of Kennedy's vital wartime jobs is that of producing metal foil packages which provide positive protection for delicate aircraft instruments, radio, radar and communications equipment, in shipment to all theaters of war . . . however remote—whatever the weather encountered. Sealed in moisture-vapor-proof Kennedy Metal Foil Packages with a selica gel desiccant, all parts subject to rust and corrosion are transported to the world's most distant points—safely, surely—their precision perfection unimpaired.

Kennedy's wartime background of accomplishment—for all branches of the Armed Forces—assures you of an unique ability to help solve your peacetime packaging needs. To serve you better and faster, Kennedy engineers are located in seven major cities. Place your packaging problems in their hands with complete confidence.

Kennedy

**CAR LINER & BAG COMPANY, INC.**

*PACKAGING PIONEERS* • SHELBYVILLE, INDIANA

*Canadian Plant:* Woodstock, Ontario • *Sales Offices:* New York, Chicago, Cleveland, Detroit, Kansas City, Los Angeles, Atlanta

*FABRICATORS IN* PLIOFILM • SARAN • KOROSEAL • METAL FOIL • CELLOPHANE • KRAFT PAPER • AND OTHER MATERIALS

Glass, for most packaging purposes, is chemically inert. Hundreds of tests and years of successful use have proved that the glass container in no way alters the taste, aroma, quality, or usefulness of drugs and chemicals; on the contrary, it *preserves* them in their original state throughout normal storage and shelf-life. It also eliminates the danger of an inner protective coating (required on other types of containers) from becoming fractured and exposing contents to chemically active inner walls. Light has little effect on glass-packed products. Undesirable changes formerly attributed to light are now known to be caused by heat and oxygen. Jars on dealers' shelves receive very little light, and of very low intensity. Moreover, commercial glassware *stops* many of the sun's rays; and, for products peculiarly sensitive to light, amber glass affords extra protection.

*"Meet Corliss Archer" every Thursday evening, entire coast-to-coast network CBS*

**C. S. HORNER,** one of Anchor Hocking's ablest and most popular men, has been a member of the Anchor Hocking family for 13 years.

ANCHOR HOCKING

GLASS & CAPS

ANCHOR HOCKING GLASS CORPORATION — LANCASTER, OHIO

# *They've Got What it Takes*

● Uncle Sam's fighting Yanks "have what it takes." No matter how tough the going . . . in any kind of weather . . . they win their way through.

Right now, as for months past, much of INLAND'S production is being used for the exacting needs of war. INLAND fibre boxes are carrying vital supplies to our armed forces all over the world.

Like the fighting Yanks, these INLAND shipping boxes have to absorb rough treatment, stand hard knocks . . . and carry on through—in every kind of weather. They, too, have to have "what it takes."

Now, with war moving toward final Allied victory, INLAND is looking ahead to the coming days of peace, and is preparing to serve the needs of industry even better than before.

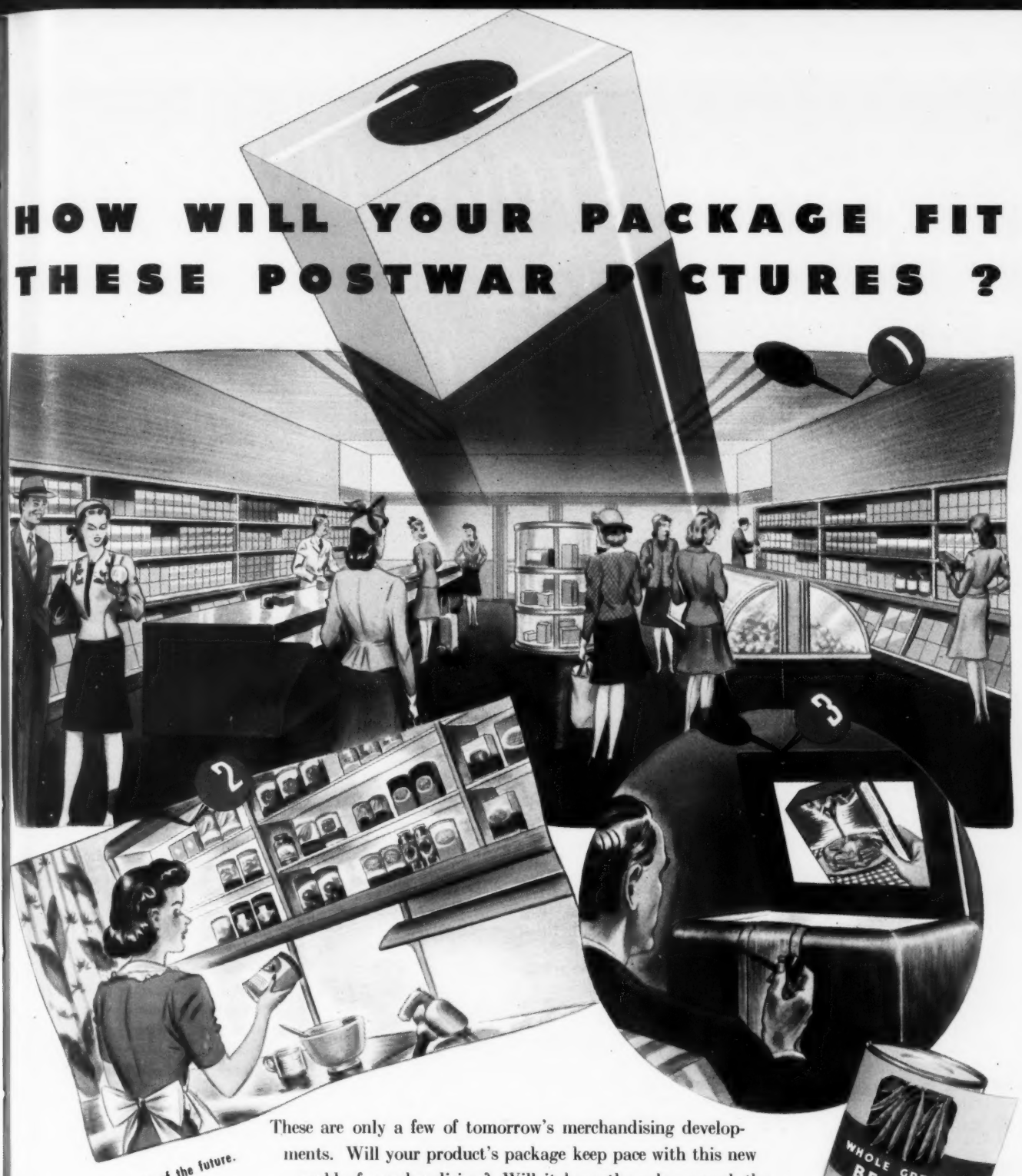
**INLAND CONTAINER CORPORATION**

# INLAND

## CORRUGATED FIBRE BOXES

**INDIANAPOLIS, IND. • MIDDLETOWN, OHIO • EVANSVILLE, IND. • MILWAUKEE, WIS.**

# HOW WILL YOUR PACKAGE FIT THESE POSTWAR PICTURES ?




1. Modern food markets of the future.
2. Mrs. Homemaker's kitchen of tomorrow.
3. Television for "fireside" merchandising.

These are only a few of tomorrow's merchandising developments. Will your product's package keep pace with this new world of merchandising? Will it have the sales appeal, the functional design to command consumer preference in what will, undoubtedly, be the most competitive era in history? Now is the time to give consideration to your postwar packaging. For experienced counsel call a "U-S" packaging specialist.

**THE UNITED STATES PRINTING & LITHOGRAPH COMPANY**

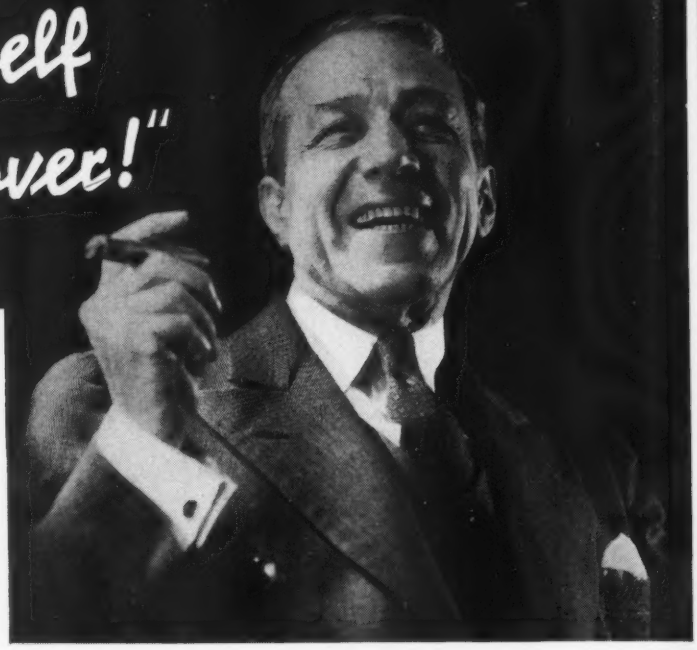
HOME OFFICE: 352 BEECH ST., CINCINNATI 12, OHIO • OFFICES IN PRINCIPAL CITIES

U·S and P·L

**5 Great "U-S" Plants . . . STRATEGICALLY LOCATED**

**RODUCING PACKAGING AND LITHOGRAPHED ADVERTISING OF HIGHEST QUALITY**

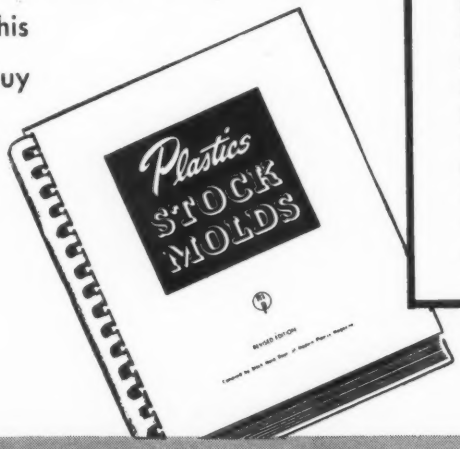
# "PLASTICS STOCK MOLDS has paid for itself a dozen times over!"



● "Yes, that is a true statement! This catalog 'Plastics Stock Molds' is worth more than its weight in gold to me. Why? Because it leads me directly to ready made molds of practically everything I want in plastics — closures, dozens of 'em, boxes, novelties, etc."

You, too, will find Plastics Stock Molds not only helpful, but vital. It contains nearly 1600 clear photographs of plastics made in available ready made stock molds. Contains nearly 200 standard extruded shapes — including for the first time a comprehensive standardized index of extruded parts. Contains a directory of stock laminated sheets, rods and tubes. Every item in the book is cross indexed by the name of the manufacturer and also by subject. You can use this book as a direct mail order catalog to buy every type of plastic part listed in the box on this page — and more!

- Flashlights
- Shaving Accessories
- Textile Accessories
- Hair Ornaments
- Cosmetic Containers
- Trays
- Office Equipment
- Frames
- Household Products
- Lamp Bases & Accessories
- Plumbing Hardware
- Electric & General Hardware
- Clock Cases
- Medical Applications
- Boxes & Containers
- Handles
- Closures
- Knobs
- Smoking Accessories
- Games & Novelties
- Jewelry




*Compiled by Stock Mold Department, Modern Plastics Magazine*

**$5 per copy.**
**(foreign $6.)**

## PLASTICS STOCK MOLDS

**122 East 42nd Street** **New York 17, N. Y.**

ALL THE WORLD'S A STAGE—including store counters where products are sold. Manufacturers put their best into the products displayed there—and then the public comes by—and judges the products *by the packages!*

It doesn't matter if your package is "fancy" or plain, whether it contains perfume or a germicide, a cosmetic, hardware, or a drug. Among *competing* packaged-products the human eye turns naturally, and with interest, to the "best looking."

If your package has good design, if it is pleasing to the eye and striking or attractive, it HAS BEAUTY and it WINS FAVOR! For beauty influences people's choice in *everything* from motor cars to mates, from neckties to kitchen ranges.

That's why refrigerators, tooth brushes, cars, and a thousand other products have advanced—by successive redesignings—from crude beginnings to more pleasing forms, proportions, colors and finishes. They—like packages—compete in a *beauty* contest; and their manufacturers *know* . . . BEAUTY SELLS!

That is why, in every Package by Ritchie—whether it contains a drug product, a cosmetic or toggle bolts—you will always find, in its lines, in its proportions, color or general design, a strong eye-pleasing quality—elements of beauty.

**HOW TO GET A BETTER PACKAGE AT LESS COST**

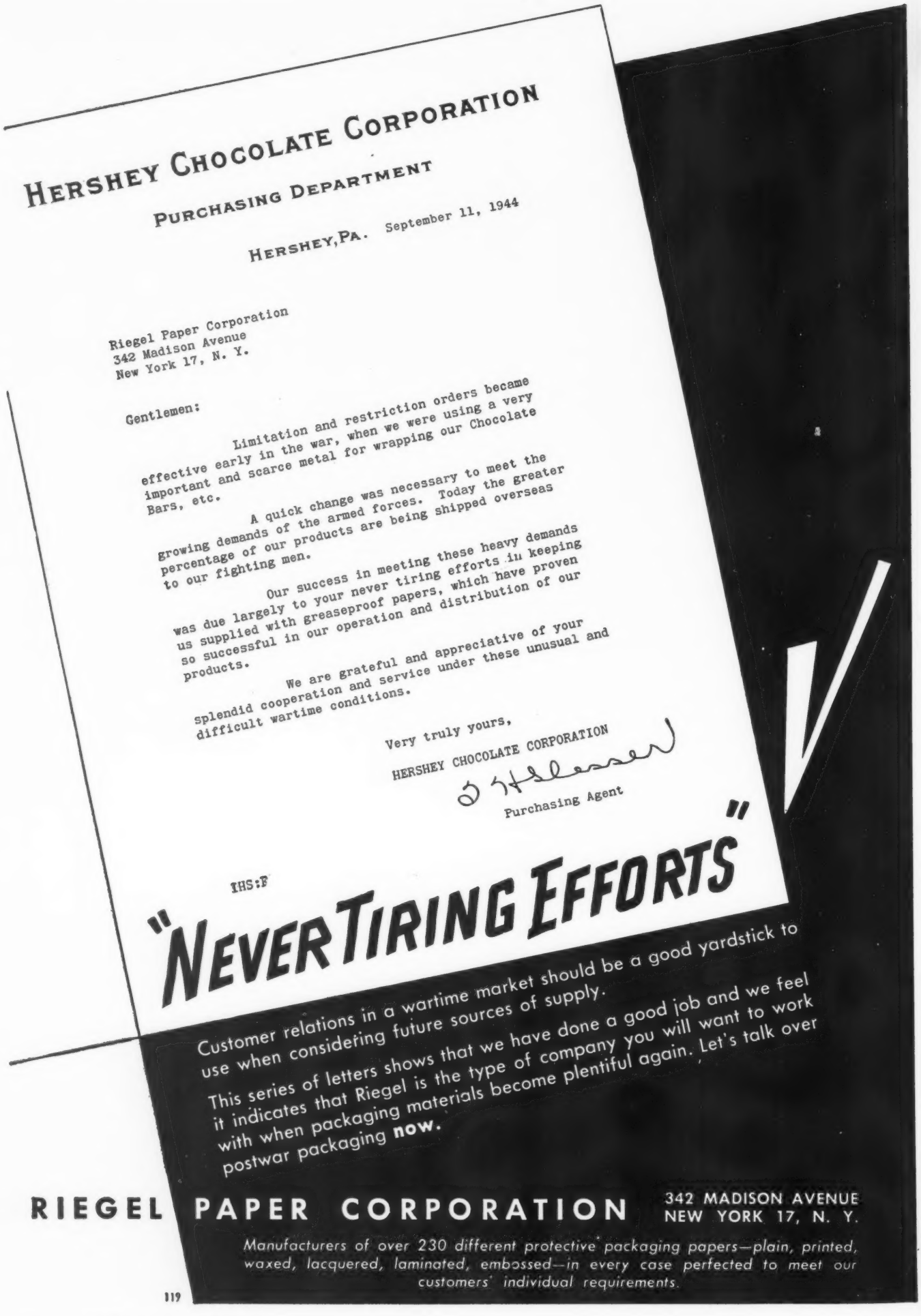
Let Ritchie design your *future* package and it will have beauty *more than skin deep.* It will have the right material and structure for its job. It will be practical, convenient to use, easy to handle, to stack and display. It will proclaim your product-identity. It will be memorable and attractive. And Ritchie's expanded, war-developed facilities for volume production assure its low cost. Let Ritchie demonstrate how *you* can get a better selling package. No obligation. Write us today.

**W. C. Ritchie AND COMPANY**

**Set-Up Paper Boxes**
**Fibre Cans**
**Transparent Packages**

8850 Baltimore Avenue • Chicago 17

NEW YORK • DETROIT • LOS ANGELES • ST. LOUIS • MINNEAPOLIS



HERSHEY CHOCOLATE CORPORATION

PURCHASING DEPARTMENT

HERSHEY, PA. September 11, 1944

Riegel Paper Corporation
342 Madison Avenue
New York 17, N. Y.

Gentlemen:

Limitation and restriction orders became effective early in the war, when we were using a very important and scarce metal for wrapping our Chocolate Bars, etc.

A quick change was necessary to meet the growing demands of the armed forces. Today the greater percentage of our products are being shipped overseas to our fighting men.

Our success in meeting these heavy demands was due largely to your never tiring efforts in keeping us supplied with greaseproof papers, which have proven so successful in our operation and distribution of our products.

We are grateful and appreciative of your splendid cooperation and service under these unusual and difficult wartime conditions.

Very truly yours,

HERSHEY CHOCOLATE CORPORATION

Purchasing Agent

IHS:F

# "NEVER TIRING EFFORTS"

Customer relations in a wartime market should be a good yardstick to use when considering future sources of supply.

This series of letters shows that we have done a good job and we feel it indicates that Riegel is the type of company you will want to work with when packaging materials become plentiful again. Let's talk over postwar packaging **now.**

**RIEGEL PAPER CORPORATION**

342 MADISON AVENUE
NEW YORK 17, N. Y.

*Manufacturers of over 230 different protective packaging papers—plain, printed, waxed, lacquered, laminated, embossed—in every case perfected to meet our customers' individual requirements.*

119

THINGS TO LOOK FORWARD TO: HANDY UNIT-PACKAGES FOR CREAMS AND OINTMENTS

OPEN. Simply tear along the embossed line to open the neck of the "tube."

EASY TO USE. Squeezes like a tube. Folding back open end protects unused contents.

*Contents stay fresh and pure in*

# HEAT-SEALED ALCOA ALUMINUM FOIL

No postwar pipe dream, but a package that is ready to go when the WPB switches on the green light. Tests are complete. Machines are perfected.*

It is another ingenious application of the superior protective properties of Alcoa Aluminum Foil, heat-sealed, whereby air, light, dirt, and germs can be completely shut out and moisture sealed in. The contents are protected from harmful changes.

User convenience is obvious. Easy to carry in purse or pocket. Simple to open, use, and dispose of. No drying out. Contents always fresh.

Low cost is a major advantage. The materials are inexpensive and high speed, automatic machines will form and fill the package economically—millions a day if desired.

This is but one of many new developments in the use of Alcoa Aluminum Foil. Whatever your product, think of Alcoa Foil for tomorrow's packages. If you'd like to share your thoughts with practical-minded foil experts, write ALUMINUM COMPANY OF AMERICA, 2129 Gulf Bldg., Pittsburgh 19, Pa.

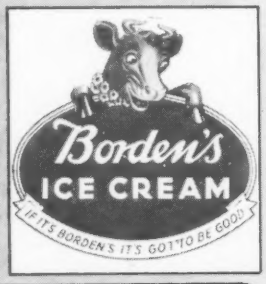
*Package and machines developed and patented by Ivers-Lee Co., Newark, New Jersey.

**ALCOA ALUMINUM FOIL CAN MAKE PACKAGES...**

Airtight
Moisture-Vaporproof
Waterproof
Lightproof
Greaseproof
Siftproof
Odorproof
Insectproof
Verminproof

**ALCOA** *Aluminum Foil*

DECALCOMANIA
*of Distinction*



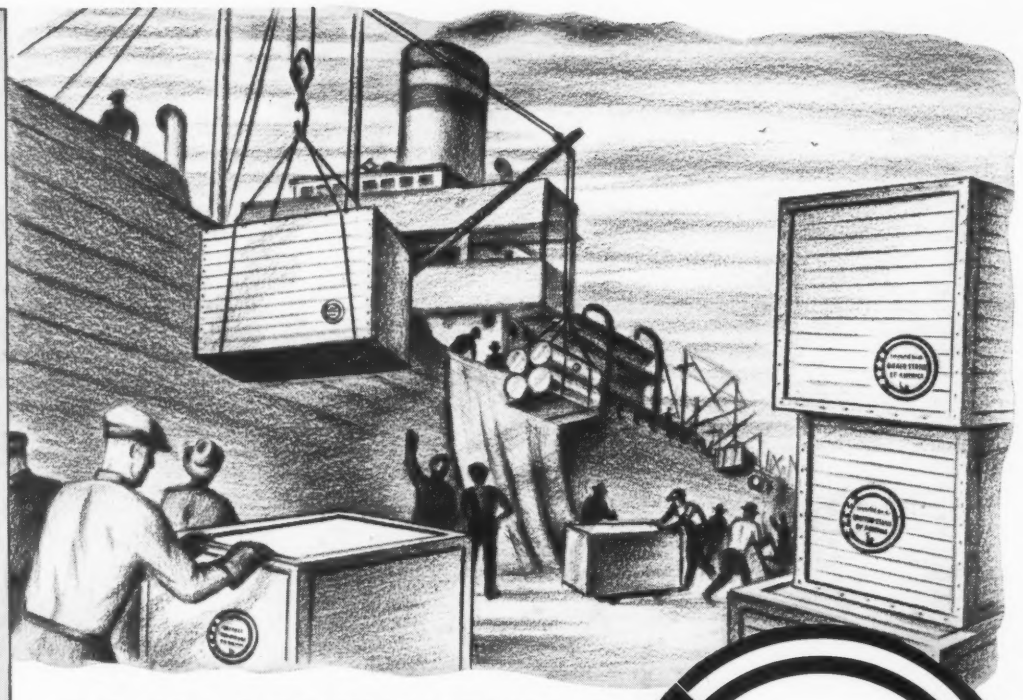

FOR TRADE MARKS

FOR WINDOWS

FOR TRUCKS

FOR BOTTLERS

FOR EVERY USE



YOUR GOVERNMENT
REQUESTS YOU TO
***USE THIS EMBLEM!***

**. . . on each product**
**. . . on each container**
**. . . on each shipping case**

## Tell the world *"IT'S AMERICAN!"*

Exporters are urged to co-operate in this nation wide effort – as a means toward greater war time and post-war good will and business promotion.

Available in any language, these OWI seals may be adapted to any size – and include a manufacturer's trade mark or be incorporated into his regular label.

Since 1856, Palm Fechteler & Co. have supplied the needs of many of America's leading business organizations with decalcomania for point of sale advertising such as window signs, valances, etc.

Whether the requirement is for a label, for a small perfume bottle, or a sign for the side of a 20-ton truck, our trained creative staff is equal to the occasion – even in these war years.

# PALM, FECHTELER & CO.

*Creators of Quality Decalcomania*

21 EAST VAN BUREN STREET
Chicago 5, Illinois

220 WEST 42nd STREET
New York 18, N. Y.

Gaylord Boxes

# 275,000 Acres of Even Finer Gaylord Boxes!

Gaylord-owned pulpwood timberlands now total over 275,000 acres, and our own reforestation projects assure an adequate supply of raw materials for the continuous operation of Gaylord Mills.

These giant stands of timber will eventually become Gaylord containers — made even finer in the future because of unusual wartime packaging developments and improvements.

From forest to finished product, Gaylord controls quality all the way through — from timber to mill to the container that exactly meets your individual requirements. It will pay you to consult our nearest office now on your postwar packaging requirements.

**GAYLORD CONTAINER CORPORATION**

**General Offices: SAINT LOUIS**

CORRUGATED AND SOLID FIBRE BOXES . . . FOLDING CARTONS . . . KRAFT GROCERY BAGS and SACKS . . . KRAFT PAPER AND SPECIALTIES

New York • Chicago • San Francisco • Atlanta • New Orleans • Jersey City • Seattle • Indianapolis • Houston • Los Angeles • Oakland Minneapolis • Dallas • Jacksonville • Columbus • Fort Worth • Tampa Detroit • Cincinnati • Des Moines • Oklahoma City • Greenville Portland • St. Louis • San Antonio • Memphis • Kansas City • Milwaukee Chattanooga • Bogalusa • Weslaco • New Haven • Appleton

BUY MORE WAR BONDS

# Your POST-WAR PACKAGE... will it have these 12 Advantages?

COMPARE your present package with the SUN TUBE UNITAINER. Does it offer the important sales and merchandising points that your product needs in the post-war era? The UNITAINER, for example, gives you these unique advantages—

1. The Unitainer is an *advanced idea* in individual, single-use containers.
2. It's *handy to use*—quickly opened with the fingers.
3. It offers a *new, better way to merchandise* single-use products.
4. The Unitainer is *safe*—hermetically sealed—non-refillable.
5. It *reduces loss* due to leaks and breakage.
6. It holds an *individual, measured amount.*
7. The Unitainer *protects your product* from light.
8. It delivers your product in *original container.*
9. It greatly *reduces shipping weight* and costs.
10. Its success as a merchandising method *has been proved* by many leading products.
11. The Unitainer is an *attractive, customer-inviting* package.
12. It's designed to *boost sales* in the highly competitive post-war period.

Vitalis, Mistol, Bromo-Seltzer and other leading products were pre-war users of the UNITAINER—found it outstanding for single-use packaging and for successful retail merchandising.

Today, of course, our facilities are busily producing for Victory, but you'll find our Plans Staff is ready and eager to discuss your post-war packaging problems . . . to show you what SUN TUBE UNITAINERS can do to make your sales picture brighter. Call or write our nearest office, today. There is no obligation.

Sal Hepatica
A Carefully Blended Effervescent Saline Combination
LAXATIVE AND CATHARTIC
ACTIVE INGREDIENTS: Sodium Sulphate, Sodium Chloride, Sodium Phosphate, Sodium Bicarbonate, Lithium Carbonate, Tartaric Acid.
NET WT. 25 OZ.
BRISTOL-MYERS CO.
NEW YORK, N. Y.
MADE IN U. S. A.

**UNITAINERS Excel for Profession Sampling!**

Sal Hepatica now package their physician's samples in Unitainers because: Unitainers protect their famous laxative from germs and moisture—don't break or crush in delivery—present a compact, appealing sample — yes, and keep production costs down.

# SUN TUBE UNITAINER

**PRODUCT OF SUN TUBE CORPORATION • HILLSIDE 5, N. J.**

CHICAGO 1, ILL.
*James L. Coffield, Jr.*
360 No. Michigan Avenue

ST. LOUIS 1, MO.
*M. P. Yates*
706 Chestnut Street

ST. PAUL 1, MINN.
*Alexander Seymour*
903 Pioneer Building

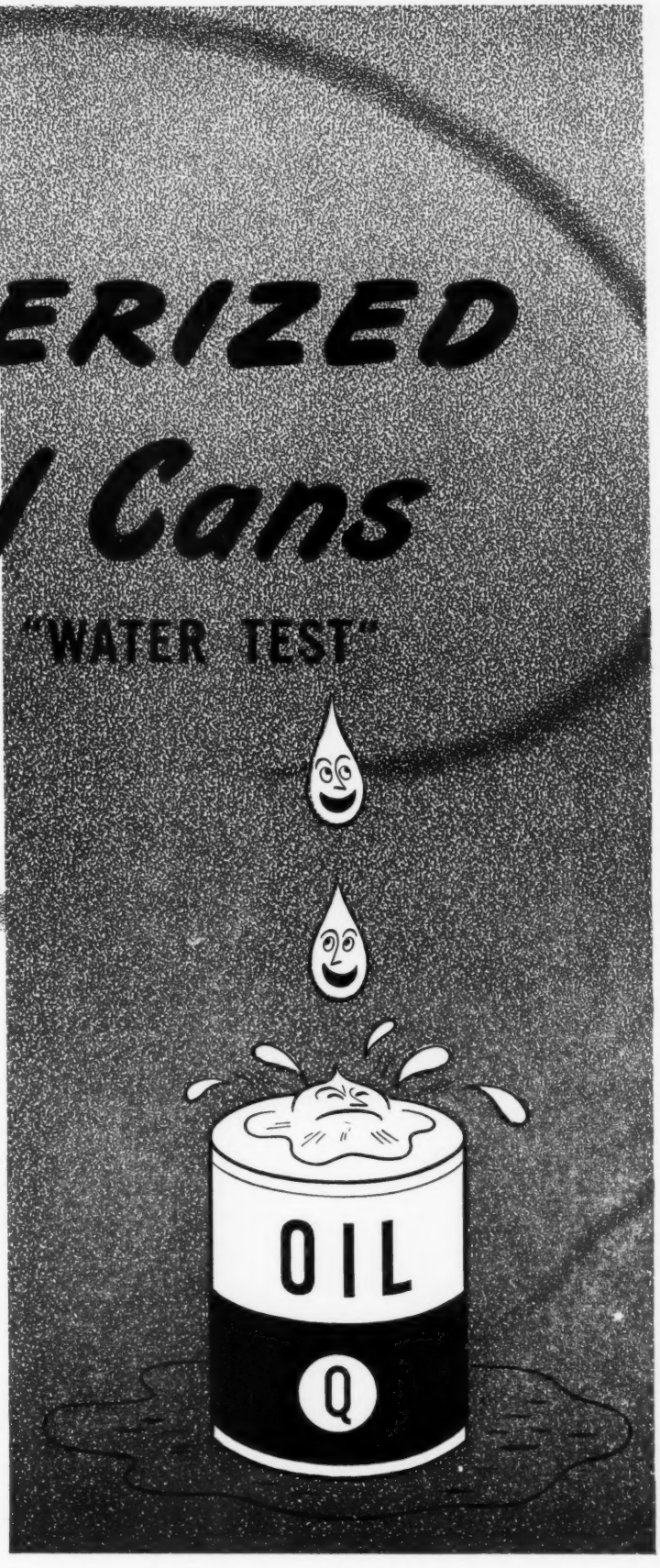
LOS ANGELES 27, CALIF.
*R. G. F. Byington*
1260 North Western Ave.

FOR VICTORY
BUY UNITED STATES WAR BONDS AND STAMPS

ARMY E NAVY

# BONDERIZED Steel Cans

## STAND THE "WATER TEST"




**Through fair weather or foul, the product packed in a Bonderized steel can has good protection.**

**Steel makes a solid, substantial package, that withstands moisture. With Bonderizing and finishing lacquer, it presents fine appearance and protects the product, from packing point to final use.**

**The Bonderized Steel Can has stood the test of ocean shipping and long storage in humid climates without damage to either the package or content.**

**PARKER RUST PROOF COMPANY**
2187 E. MILWAUKEE AVE. • DETROIT 11, MICHIGAN

**BONDERIZING** HOLDS PAINT TO STEEL

**PARKERIZING** INHIBITS RUST

**PARCO LUBRIZING** RETARDS WEAR

**PARKER PRODUCTS CONQUER RUST**

Official U. S. Marine Corps Photo

# *Keep Your Plant's Quota* "OUT FRONT!"

Victory depends upon materials—as well as men! To keep our American forces "closing in" overseas, you and every other manufacturer here at home must *keep on making* "Out Front" War Bond Quotas!

This means *action now* on *every* point in the fighting 8-Point Plan to step up Payroll Deductions. For instance, have you a 6th War Loan Bond Committee, representing labor, management and other important groups in your company? Selected Team Captains yet—preferably returned veterans? If so, have you instructed them in sales procedure—and given each the Treasury Booklet, *Getting the Order?*

How about War Bond quotas? Each department—and individual—should have one! Assigning responsibilities is vital, too! Have you appointed enough "self-starters" to arrange rallies, competitive progress boards and meeting schedules? Are personal pledge, order or authorization cards printed, and made out in the name of each worker? Planning for resolicitation near the end of the drive? Your State Payroll Chairman is ready now with a detailed Resolicitation Plan. And, have you contracted for space in *all* your regular advertising media to tell the War Bond story?

Your positive *Yes* to *all* points in this forward-to-victory 8-Point Plan assures your plant meeting an "Out Front" Quota in the 6th War Loan—and speeds the day of unconditional surrender!

*The Treasury Department acknowledges with appreciation the publication of this message by*

## MODERN PACKAGING

*This is an official U. S. Treasury advertisement—prepared under the auspices of Treasury Department and War Advertising Council.*

# UNDERWEAR IS IMPORTANT IN PACKAGING, TOO . . .

Today's foods are *completely* dressed, even to underwear. Consider Betner's liners, for example, worn "next to the skin" of America's *finest* foods!

**BETNER'S LINERS**

1. Suitable for any hygroscopic food
2. Thermosealed with minimum equipment
3. Prevent leakage, seepage
4. Prevent flavor loss
5. Moisture- vapor-proof
6. Low in cost

Best proof of Betner quality is the list of processors who use Betner service. For some we supply the complete package . . . inner and outer bags. For others, liners only. Betner's is a complete *bag* service . . . we turned out over 4 *billion* bags last year. And every bag—you could choose any, at random—would be proof of the painstaking care with which we operate.

Why not entrust us with your packaging problem? Our designers and research technicians will willingly study your requirements, offer suggestions which will obligate you in no way. Our main office is in Devon, Pa., and we're at your service the moment a letter or phone call reaches us.

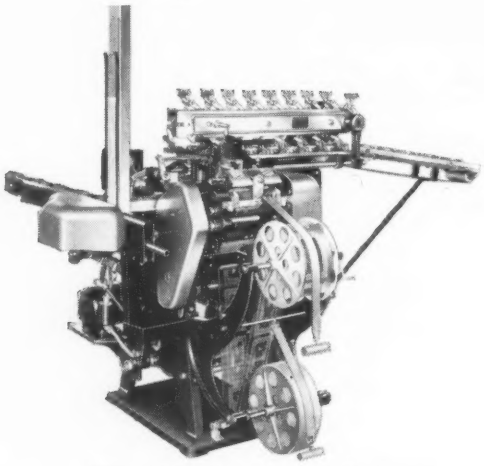
**Benj C Betner Co**

**DEVON, PA.**

DROMEDARY Gingerbread Mix
PIPING HOT GINGERBREAD IN A JIFFY!
JELL-O CHOCOLATE PUDDING
DRY-PACK FRENCH ONION SOUP MIX
Betty Crocker VEGETABLE NOODLE SOUP INGREDIENTS
6 SERVINGS
Duff's GINGER BREAD MIX

# *Fragile and Irregular Shaped Candy Bars-Biscuits-Cookies* are

successfully wrapped by Wrap-O-Matic. In fact, Wrap-O-Matics are so ingeniously designed that they can wrap a package of thin air. Shape and texture are no obstacle, neither is the type of wrapper used, for Wrap-O-Matic uses glassine, cellophane, foil or any type wrapper that can be printed in rolls.



Wrap-O-Matics are built in 2 basic models—side-intake (illustrated) for feeding directly from enrober belt . . . straight-intake especially designed for multiple piece products.

Wrap-O-Matics operate at high-speed—as fast as 120 units per minute—saves up to 80% in labor and up to 35% in wrapping material . . . two vital factors in today's material and manpower shortage. That's why today over 100 leading candy and bakery products are wrapped by Wrap-O-Matic.

You, too, can speed up production, save in wrapping labor and material and add extra sales appeal to your product by installing Wrap-O-Matics. Write today for illustrated brochure and complete details.

**LYNCH** Manufacturing Corporation, Defiance, Ohio U.S.A.

WRAP-O-MATIC DIVISION

The iodine in this Kimble "crush" ampul can be applied quickly and easily to wounds. These ampuls are but one of the many types of essential Kimble Glass Containers. ★ Life-saving and pain-relieving materials could never be effective without the containers that carry them to the point where they go into action.

KIMBLE *Glass* CONTAINERS *For Assurance*

• • • *The Visible Guarantee of Invisible Quality* • • •

KIMBLE GLASS COMPANY . . . . VINELAND, N. J.

# LOOKING INTO THE FUTURE

*When you think of bottles think of*

Swindell

**Machine made and hand made glass containers for cosmetics, drugs and beverages.**

**SWINDELL BROTHERS, Inc.** BALTIMORE, MARYLAND

200 FIFTH AVENUE, NEW YORK ROBERTO ORTIZ—HAVANA, CUBA

# The TRADE NAME "MENASHA" NOW BECOMES MARATHON

900—The Menasha Printing Company was established.

912—The Menasha Carton Company was established.

917—The two companies merged and the company name became Menasha Printing and Carton Company.

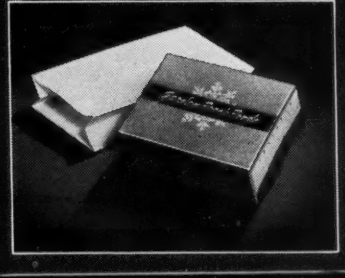
927—Marathon Paper Mills Co., chief supplier of Menasha raw materials for many years, purchased the Menasha Printing and Carton Company and the Menasha organization became The Menasha Products Company, Division of Marathon Paper Mills Company.

944—The name Marathon Corporation was adopted as a simple, uniform corporate name to apply to all plants and offices of the organization.

That is the evolution of a distinguished name food packaging. There will be no change in e company's policies or personnel. Marathon ll continue the product improvement and forrd-looking developments which have been sponsible for the company's progress. The od Industries will find the Marathon name a rthy successor to the reputable corporate mes which it now replaces.

THE NEW MARATHON TRADE-MARK

ARATHON CORPORATION • MENASHA, WISCONSIN



# FOR FILLING *The Spice of Life*

## STOKES & SMITH

## *EQUIPMENT IS PREFERRED*

Illustration shows Model HG 84 Automatic Duplex Filling Machine

At the home of Durkee Famous Foods in Elmhurst, Long Island, S & S Machines automatically fill containers with the desired amount of Pepper, Cinnamon, Allspice, etc. A clean, accurate fill is provided at 60 per minute production.

Now, while you are formulating your post-war plans be sure to consider your packaging requirements. Although we cannot supply S & S Machines to all as yet, our engineering department is able to help lay plans that can be fulfilled when restrictions are lifted. Send us samples . . . tell us your needs.

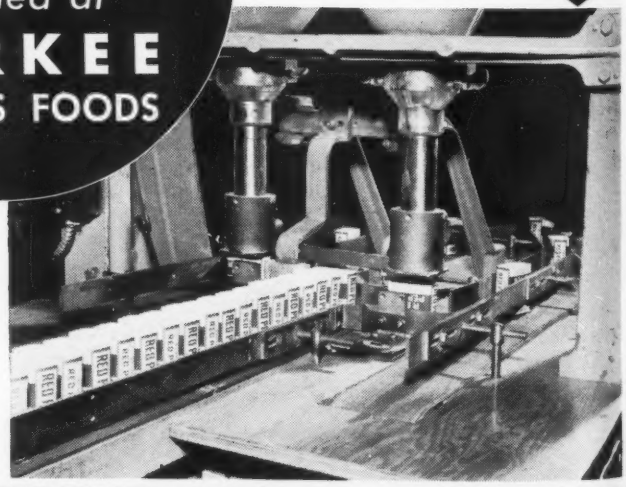
S&S

**DUPLEX AUTOMATIC FILLING MACHINES**

*installed at*

**DURKEE FAMOUS FOODS**

A close-up view showing Duplex Auger Feed



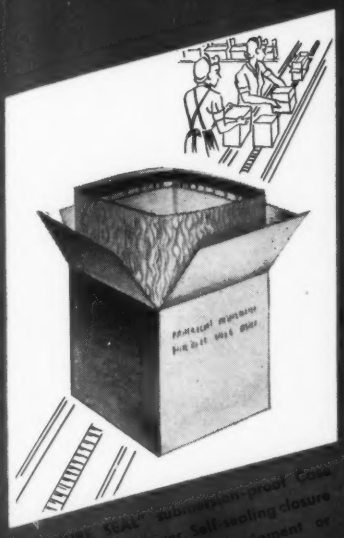
## STOKES & SMITH COMPANY

FRANKFORD, PHILADELPHIA 24, U. S. A.

**FILLING · PACKAGING · WRAPPING MACHINES**

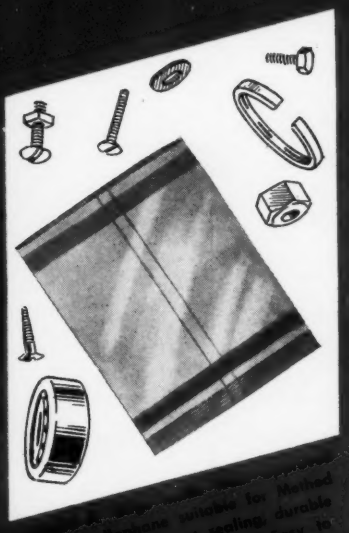
Speeds to suit your needs — 15 · 30 · 60 · 120 per minute

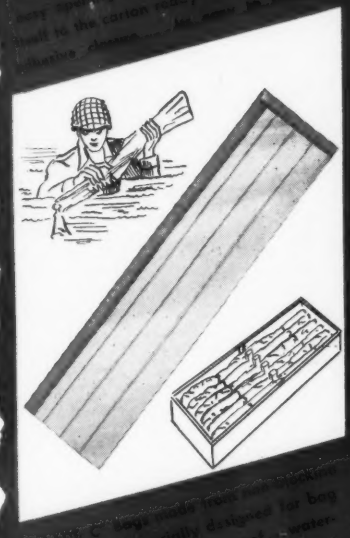
BETTER MACHINES FOR BETTER PACKAGES



"PRESSURE SEAL" submersion-proof Case Liner and Carton Cover. Self-sealing closure top . . . no heat sealing equipment or other adhesive required. It's fast — easy — positive . . . Economical in every way.

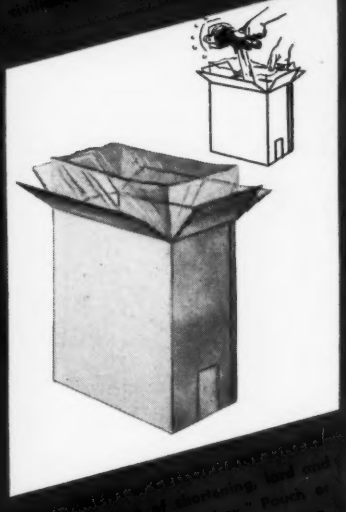
Types of cellophane suitable for Method 1 and 1A packs. Heat sealing, durable duplex tight seal construction. Easy to handle. Available in wide range of sizes.





Type construction . . . printed or plain. Suitable for hand sealing for a wide variety of packaging uses. Convention finished at moderate

"SEALED-C" bags made from non-corrosive metal specially designed for bag use. Non-corrosive . . . grease-proof . . . water-proof . . . durable . . . uniform construction. Suitable for Method 1 or 1A packs.



Type construction . . . printed or plain. For both packing of shortening, lard and meat products. For "bag in box" pouch or liner bags type . . . tight seal construction.

# If Your Packaging Requires Bags Plan on MEHL BAGS

These are the Mehl Bags serving both war and essential civilian industries ...made from cellophane, acetate, and various papers — alone and in combination . . . providing protective properties of water-proofness, grease-proofness and moisture-proofness for both primary and secondary packaging. Consult us also on special problems pertaining to material, size or construction.

## MEHL MFG. CO.

*Division Sydney Thomas Corp.*

CINCINNATI 5, OHIO

Originators of patented Transparent Garment Bags for Dry Cleaners, Hotels and Laundries.

*American infantry unit carrying full equipment, including machine gun, on Normandy Beachhead. Signal Corps Photo.*

# EQUIPPED TO WIN!

Sheffalloy TRADE MARK REGISTERED TUBES
SHEFFIELD PROCESS

Months of preparation and planning must back up *any* battle campaign. The success or failure of an engagement often depends upon the quality and character of the supplies that equip our boys to win.

That's true of any campaign—battles overseas or sales battles here. Plan now for the *sales* campaigns coming soon. Equip your products to win . . be ready with Sheffield Process Tubes—the toughest, strongest tubes ever made! Let us tell you, now, about *Sheffalloy* and our exclusive *Sheffield Process* of melting, mixing, tempering metals to give a finished tube of surpassing strength and pliability. Write or phone us, now.

**NEW ENGLAND COLLAPSIBLE TUBE CO.**

3132 S. CANAL STREET, CHICAGO 16 • NEW LONDON, CONN. • W. K. SHEFFIELD, 500 FIFTH AVENUE, NEW YORK 18
THE WILCO COMPANY, 6800 McKINLEY AVE., LOS ANGELES 1

# KIDDER POINTERS

## No. 4. Observations of trends and indications in packaging . . . noted by the manufacturers of Kidder "3-Point" Presses, Kidder Press Company, Inc., Dover, N. H.

A postwar survey to learn needs of 21 industries for the next five years and to collect foresighted management ideas and plans is being conducted by the National Paper Box Manufacturers Association. Peacetime box needs will vary greatly sectionally, with New England interested in more jewelry, games, textile and fancy boxes; Central States seeking quality boxes especially for clothing and novelties; West wanting department store, retail, confectionery and wearing apparel boxes; Pacific Coast more interested in acetate and gift boxes; with an increased demand for all types of boxes coming from the Eastern and Southern parts of the country.

"Postwar Box Covering Papers" titled material of more than passing interest to packagers prepared by Ralph H. Laue (Bradner Smith & Co.) as an address before the NPBMA War Conference at Chicago. The matter of special coatings and new papers was highlighted and need to tie in these developments with changes in merchandising methods was emphasized . . . with attention to plastics competition stressed. "The box makers should . . . protect the business they have and expand with these changes . . . and advise the manufacturers of paper supplies with demands of packaging manufacturers . . . Practically all the converters have definite plans as far as the future is concerned with respect to new colors, new designs and new embossings," he concluded. SHEARS (June, 1944, Page 62) has the story in compact form if you're interested.

Food concentration and dehydration mean improvements in distribution and merchandising come the peace . . . and packaging innovations will produce minimum of bulk and weight, assured protection and wrappings adapted to new requirements. For instance, scientific food concentration means a glass of delicious orange juice from a small teaspoon of concentrated syrup . . . with processed oranges eliminating cost of freighting water, pulp and rind in future transportation.

"Glimpses into the Wonder World of Tomorrow" (E. I. duPont deNemours Inc. Cellophane Division, Wilmington 98, Delaware) is filled with scientific packaging ideas . . . for such possible merchandising practices as sit-down shopping, "groceries in her pocketbook", Rural Air Delivery, shopping Tele-columns of the air . . . and emphasis is on packaging for greater eye appeal and product protection.

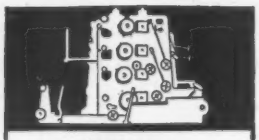
Packaging is one of the businesses hardest hit by the war . . . but industry has met necessity with new designs and construction and developed superior packaging which will probably outlast the war and find less waste by business come peace. The American Management Association has brought out seven outstanding pamphlets on problems in the packaging field, ranging from packaging dehydrated foods, standardization and simplification to actual case histories of conservation and substitution in packaging. Material includes general expositions in lay language through highly detailed and scientific talks on technical construction of types of cartons and containers. Queries should be addressed to AMA, 330 W. 42d Street, New York City.

How one industry rose to new heights after the last war . . . a fascinating story of expansion of the fish market of New England after World War I . . . is told in PRINTERS' INK, August 11, 1944. From today's quick-frozen, neatly wrapped fillets of fish, the postwar market in fish looks towards new cooked or semi-prepared packaged products on the market . . . including frozen and packaged pet foods made of fish waste.

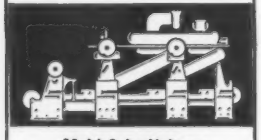
Washington's Pentagon Building houses an Army Ordnance packaging museum for officers seeking solutions to new packaging problems.

The story of the development of truncated cone-shaped packages, consisting of a single thickness of heavy waxed paper with an overlap, sealed at the top and taped for further moistureproofness, is interestingly told in the June, 1944 issue of SHEARS (360 North Michigan Avenue, Chicago). Health requirements for sterility, moistureproofness and water-tightness are met by this paper cone container which is used from milk to peanuts, coffee to banana flakes . . . lending itself to dovetail packing in one corrugated shipping container. Colorful printing and design lend further values to cone-packages for merchandising.

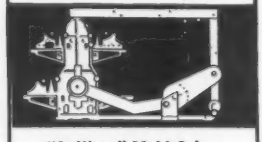
Taystee
BREAD
Taystee Bread ⇨ Tasty Toast
Enriched
Taystee
BREAD
WRAPPER ACHIEVEMENT OF THE MONTH
Rich red, blue and yellow oil inks blended to specifications give bright coloring with distinct display appeal to the standard bread wrappings for Enriched Taystee Bread, a Purity Bakeries Product. Well-designed with a centre red seal, yellow bordered, the effective packaging invites consumers to eat Taystee Bread and Tasty Toast. The end design, repeating the red center elliptical pattern, adds qualifications for its blue-lettered "Enriched" by emphasizing the vitamin values in the loaf. Overall the waxed wrapper has colorful, distinguishing display and sales appeal. For this package achievement on Kidder 3-Point Presses, Kidder salutes
POLLOCK PAPER & BOX COMPANY
DALLAS AND HOUSTON, TEXAS
SOUTHERN WAXED PAPER COMPANY
Atlanta and Birmingham
THE WATERPROOF PAPER & BOARD CO.
Cincinnati and Loveland, Ohio



**Multi-Color Letter Presses**
for waxed paper, box wrappers, etc., rewound or sheet-delivered — up to 72".



**Multi-Color Unitype Gravure Presses**
for cellophane, foil, pliofilm, etc. — rewound or sheet-delivered — up to 36".



**"Anilliner" Multi-Color Rubber-Plate Presses**
for decorative papers, cellophane, glassine, etc. — up to 65".

**Slitters & Rewinders**
for paper mill finishing rooms and small-roll, high-speed slitting — up to 72".

# WHY YOU SHOULD CONSULT WITH KIDDER NOW . . .

During the period when Kidder manufacturing facilities were engaged in war work, Kidder engineers created a number of developments in multi-color printing that the converting trade will find interesting, significant, and profitable. These developments have reached a stage where consideration of them by converters can be invited.

In addition to the "3-Point" letter presses which carried the Kidder trade-mark into many of the country's most important wrapper-printing plants (they printed, for example, better than 95% of all waxed bread wrappers), Kidder has expanded its line of aniline presses and is introducing a new line of gravure presses offering important new advantages.

These developments can be shared with prospects, now. A talk with a Kidder engineer involves no obligation. Manufacturing restrictions have been lifted and we are in a position again to solicit your inquiries.

## KIDDER PRESS COMPANY, INC.

*Printing Machinery,* **DOVER, N. H.**

KIDDER THREE POINT PRESS

**KIDDER**
Manufacturer of "3 Point" Presses — so-called because they fulfill the three major requirements for perfect printing.

**CONTROL OVER THE PAPER**

**PROPER DISTRIBUTION OF INK**

**ACCURACY OF THE IMPRESSION**

# TOMORROW will reveal the plans you make *today!*

Take a look into the future. Do you see yourself struggling to meet the stiff competitive situation of the post war world? Or are you laying the foundation now for smooth, efficient business operations? One of the important steps you should take immediately is the planning of your post war packaging. Competent APACO packaging engineers are ready now to help you plan containers and packages for your post war products. Your distributing and marketing success of tomorrow may be revealed by the plans you make today. Start now! Let APACO study your potential needs and make suggestions for completing the job!

## ATLANTA PAPER COMPANY

*Atlanta*

*Established 1868*

## OTHER DOW PACKAGING MATERIALS INCLUDE

### *Ethocel Sheeting*

**FLEXIBLE AND TRANSPARENT**

This rigid, transparent packaging material is extremely tough . . . a quality derived from its base . . . Dow Ethylcellulose.

It retains all its serviceability and sales appeal despite shelf wear and handling. These qualities, plus its ease of fabrication, point to an early resumption of its high place in rigid transparent packaging.

### *Stripcoat*

**DIP IT • SHIP IT • STRIP IT**

Stripcoat is a hot melt dip which protects metal parts with a tough, resilient skin that is quickly applied, sets immediately, and is removed easily by slitting and stripping.

Stripcoat will be widely used to protect metal parts and similar products during transit or while they are being stored on dealers' shelves.

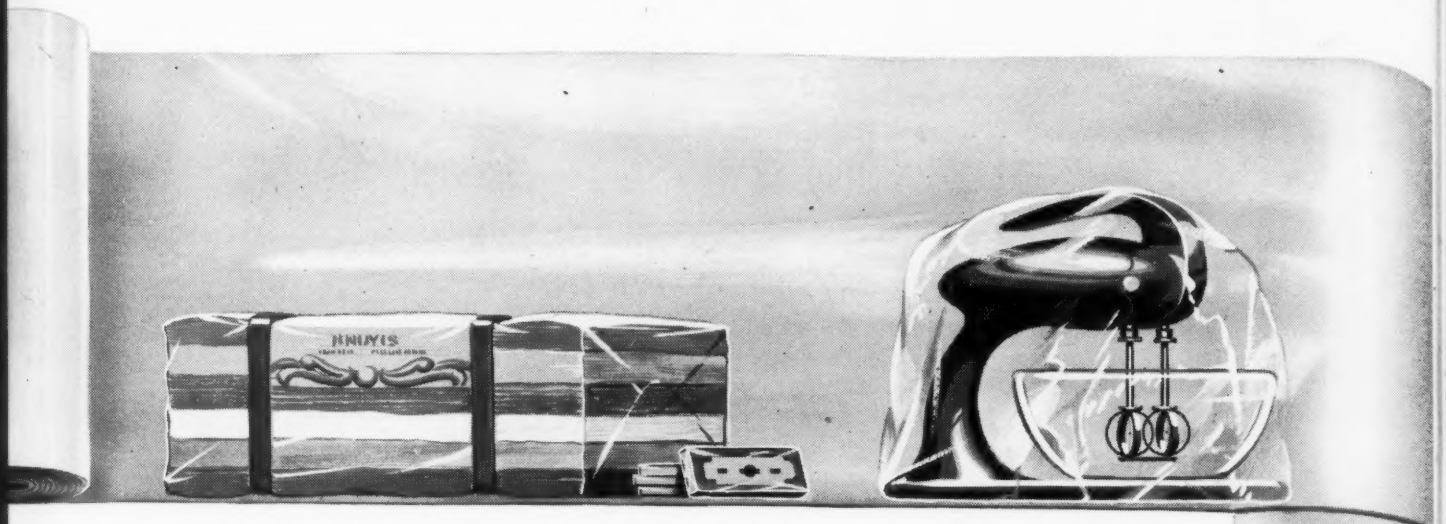
# It's in the Bag—After the War

The packaging industry can be proud indeed of its war record. Its task has been record smashing and unprecedented . . . protecting thousands of articles over the Seven Seas. Whether the destination is a hot, steaming tropical island or sub-zero Arctic lands, implements of war must get through in tiptop condition.

That task has been done—and done well. And in accomplishing this history-making job, new packaging materials have come to the fore.

In the search for materials that would do jobs that had never been done before, Dow developed Saran Film. You already know the rest of the story—how it is protecting thousands of guns and other materiel on the way to the front.

And many of you are already planning to protect peacetime products against moisture by placing them in Saran Film bags and packages.



## *KEEPS MOISTURE IN ITS PLACE*

What is it that makes Saran Film the choice of war production experts and peacetime planners?

One single characteristic stands out—Saran Film's truly remarkable ability to keep moisture in its place, in or out as the case may be. In this respect, Saran Film has no equal, for its moisture resistance is three times greater than that of any similar material with which it might be compared.

For this reason alone, package designers are planning on Saran Film. But it possesses many other advantages—advantages that are vital to top ranking transparent packaging material.

For one thing, Saran has an extraordinarily high resistance to chemical action. It withstands greases, oils, water, gasoline, and many other normally injurious substances. Saran Film is tough, too. It has an average tensile strength of 7,000 pounds per square inch crosswise and 11,000 pounds per square inch lengthwise. In resistance to moisture, Saran Film is unsurpassed and it retains this quality despite aging. Actually, after aging, Saran Film has 50% greater resistance to moisture. It successfully withstands more than 200 hours in the fadeometer with only a slight color change.

All of these qualities add up to a lot of plans for Saran Film. Why not investigate so that you, too, will know how this remarkable packaging material fits into postwar plans?

**THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN**

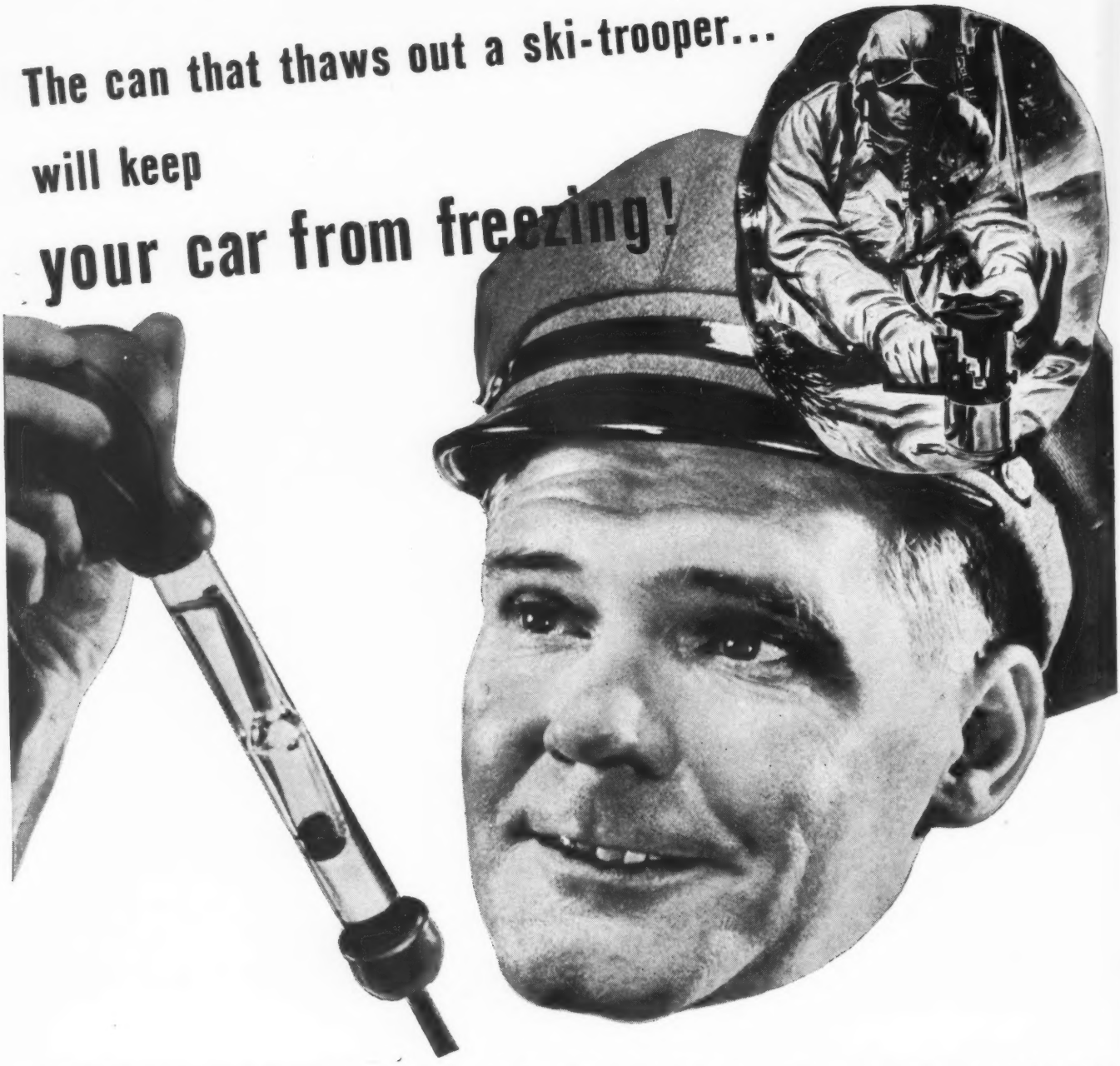
New York • Boston • Philadelphia • Washington • Cleveland • Detroit
Chicago • St. Louis • Houston • San Francisco • Los Angeles • Seattle

**DOW**

**CHEMICALS PLASTICS MAGNESIUM**

**INDISPENSABLE TO INDUSTRY AND VICTORY**

# The can that thaws out a ski-trooper... will keep your car from freezing!



● Imagine for a moment, please, that you're a ski-trooper. You're caught in a blizzard, cold and hungry. There's no dry wood about. How do you make a fire?

You just reach in your pack and take out a portable stove and a tin can. The can carries precious fuel which you pour into the stove through a special spout. In a few minutes you're cooking a hot meal.

Easy, isn't it? The can makes it so. And, like all cans, it's not only convenient, but strong and safe. It *completely* protects the ski-trooper's personal "anti-freeze."

This can is only one reason why you seldom get anti-freeze in cans for your car today. But after the war you'll again get all the brands and types you want in sealed, tamper-proof cans . . . *completely* protected. We've a hunch you'll get even better anti-freeze, too.

To do our war job, we've developed new ideas and new skills. That's why, as we look ahead, we see *new and better things in Continental cans.*

**NOTE TO MANUFACTURERS**—We'll be glad to discuss present and future uses or improvements of your product or package. Write Dept. A., 100 East 42nd Street, New York 17, N. Y., or Continental Can Company of Canada, Limited, Sun Life Bldg., Montreal.

**CONTINENTAL CAN COMPANY**

**NEW AND BETTER THINGS IN CONTINENTAL CANS**

*Awarded to Plant 78, Chicago • Illinois*

ARMY E NAVY

**SAVE TIN CANS—HELP CAN THE AXIS**

# A+ IN 3 GREAT WAYS

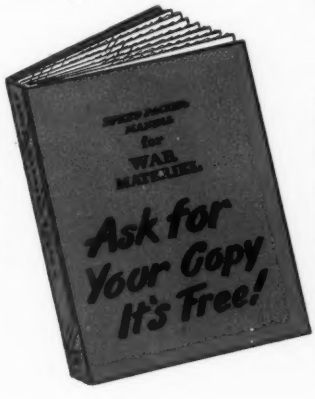
# Sherman V-28

## The A+ Protective Paper

New examples of the many ways in which the versatile Sherman V-28 can be used: *Top*, Method I, wrapping on circular frames. *Bottom*, small assembly wrapped first in V-28, then packed in box with dessicant, wrapped in Sherman V-27 (Grade C) and sealed with a wax dip. Sherman V-28 meets or surpasses all government Grade-A specifications: 100-15, 53-W-3, AN-P-12a.

**SHERMAN MAKES A GREAT LINE OF PROTECTIVE PAPERS**

Grades A, C, BE. Types I, II and III, Corroflex, the Flexible-Cushion Wrap. Protective Specialties for baking and packaging.




SOLVED! SAFER Protection for Method I Packaging! Sherman V-28 meets all government specifications for Grade A non-corrosive papers (Type II.) Better still, it's *anti-corrosive* with three great "plus" advantages:

### 1. Extra Greaseproof Protection

Sherman V-28 gives 3 times greater protection than government minimums (1800 seconds compared to the required 300, on folded sheets.)

### 2. Corrosion Inhibitor

Impregnated with a positive, corrosion inhibiting compound.

### 3. Mold Inhibitor

Provides an urgently needed protection against dangerous mold.

Try this safer, A+ paper without cost or obligation. Ask for free trial samples:

# Sherman

**PAPER PRODUCTS CORPORATION**

Newton Upper Falls 64, Massachusetts

*DISTRIBUTORS IN 121 MAJOR CITIES*

**ASK FOR YOUR COPY—IT'S FREE**

*Gentlemen:*

Certainly, we're interested in trying an A+ protective paper. Send free trial roll of Sherman V-28. Also, copy of the big War-Packing Manual. No obligation, of course.

Name.....

Company.....

Street.....

City and State.....

Duraglas
OU CAN SELL IT
BETTER
IN GLASS

We Cut It's Weight
49.2%

# Just one of the Owens-Illinois Improvements in Glass containers

● You wanted lighter, *stronger*, better designed glass containers.

So, since 1936, we've reduced the weight of Duraglas No. 303 processed food jars by 49.2%—and the new Duraglas containers are more efficiently packed, easier to seal, easier for housewives to open and empty, and *stronger*.

Their new toughness guards your products on the way to market. Their lower weight reduces transportation costs.

Moreover, clear, sparkling Duraglas containers are direct, simple means to improved labeling. Their clear vision permits your products to sell themselves at a glance.

For the coming postwar fight for sales, fortify your good products with the winning, all-star combination—brand acceptance plus the eye-buy appeal of Duraglas containers at a competitive price.

**Enjoy Fred Waring and his Pennsylvanians every Thursday.**
**Blue Network, 7:00 to 7:30 P. M., Eastern War Time.**
*Consult your newspaper for local time and station*

**OWENS-ILLINOIS GLASS COMPANY**
**TOLEDO 1, OHIO**

Duraglas
CONTAINERS
YOU CAN SELL IT BETTER IN GLASS

# "SEAL-SPOUT"

*formerly by American Aluminum Ware Co.*

**now by**

## SEAL-SPOUT CORPORATION

**361-367 Jelliff Avenue Newark 8, N. J.**

---

*The* famous "SEAL-SPOUT" is manufactured by a new organization. But that is the only difference between the old and the new dispenser.

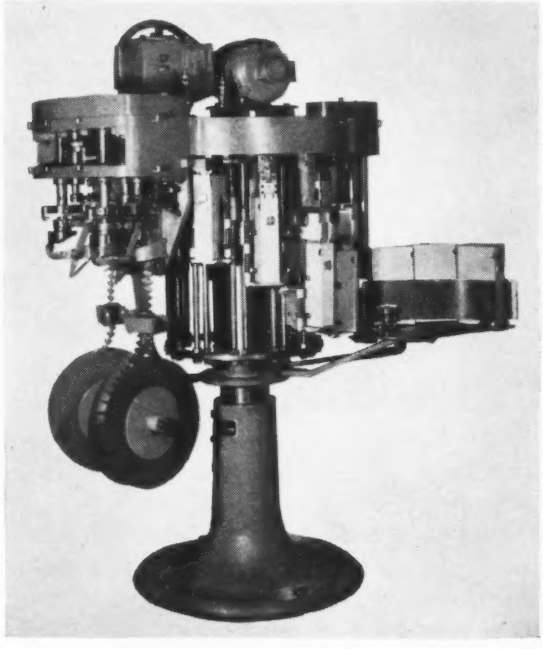
"SEAL-SPOUT" is, more than ever, the packaging *must* for dry, free-flowing products such as farina, rice, sugar, salt, coffee, cereals, baby food, ground meals, bird seed and gravel, soap flakes, cleansing powders, etc. In many fields, consumers *expect* "SEAL-SPOUTED" packages. In all fields, they appreciate the convenience and sanitation of "SEAL-SPOUT."

We offer not only "SEAL-SPOUTS" in various sizes, but also the equipment for inserting them into cartons. This automatic spout-inserting machine fits into the fastest packaging lines.

The spout is attached automatically and clamped to the board of the carton—to form a sealed package until opened by the consumer.

Send us one of your cartons and we'll return it "SEAL-SPOUTED." Remember the new name is

**SEAL-SPOUT CORPORATION**
**361-367 Jelliff Avenue Newark 8, N. J.**



**"SEAL-SPOUT" CORPORATION**

361-367-JELLIFF AVE.
NEWARK 8-N. J.

*The Very IDEA!*

A specially created private design paper in color will be presented without obligation. Write for full information from our Creative Bureau.

# PRIVATE AFFAIR

## TO PLEASE YOUR PUBLIC!

Post-War is just around the corner. Catch that coming flood of business with Private Design Packaging Papers. Your individually-created design on boxes, bags and wrapping papers will spotlight your product or your store, build prestige, increase good will and accelerate sales.

**PRIVATE DESIGN PACKAGING PAPERS**

are used profitably by America's outstanding manufacturers, wholesalers and retailers.

★ **MATTHIAS**

**PAPER CORPORATION**

165 W. BERKS ST. • PHILADELPHIA 22, PA.

# JUGGLING ? OR COLOR CONTROL?

*Typical of the precision control equipment in use at IPI is the recording spectrophotometer, a measuring device capable of detecting almost infinitesimal variations in color reflectance in ranges far beyond that of the human eye.*

To maintain uniformity of color on your packages you have a choice between setting up each job on the press and juggling the inks for correct color matches or of establishing color control before you begin to print. The logical method, of course, is to make sure *before* you start.

This can be accomplished accurately and dependably through an IPI Color Standards Survey. After the desired colors and stocks have been selected, leading package printers consult IPI. Together we survey the printing conditions which must be met. The correct formulation of ink for each job will then be determined, taking into consideration the normal physical or chemical influences which might affect the final result. We then furnish the printers with color guides of the exact colors which have been specified—on the types of stock which will be used—showing (1) average, (2) lightest and (3) darkest allowable tolerance. The IPI branch serving the printer will have a record of the formulas. All that the printer will have to do at any time to obtain the desired shade is to order by formula number from IPI and the proper ink will be supplied.

Leading package, bag, carton, container and label printers have long recognized International Printing Ink's technical skill and experience in the development of materials and methods for uniformity of color control, inks without odor, faster drying inks, non-bleeding wax-set inks, and inks resistant to soap, moisture, mild alkalis, alcohol or food acids. This leadership is the direct result of our continuous program of color research and our use of precision control equipment—such as the General Electric Recording Spectrophotometer, Spectrograph, IC Viscometer, IC Tackmeter, Electron Microscope and other equipment, some of it our own development—for the exact measurement and analysis of color and materials. IPI laboratory technicians and your IPI representatives are equipped to help you. Keep in touch with IPI!

ipi

INTERNATIONAL PRINTING INK

DIVISION OF INTERCHEMICAL CORPORATION, EMPIRE STATE BUILDING, NEW YORK CITY

*Reg. U. S. Pat. Off.*

## PLASMA TO THE RESCUE...
## Mr. Cellophane protecting the needle!

THE NEEDLES which transmit blood plasma to our Armed Forces *must be kept sterile.* And that's Sylvania cellophane's job! The needles are first sealed in cellophane then sterilized at terrific heat. The cellophane stays air-tight and bacteria resistant. The needles stay sterile!

One more essential war job for Sylvania! One more "command performance" for cellophane. But bear in mind that the developments Sylvania is making today will mean more uses for cellophane . . . and better cellophane . . . in the postwar tomorrow.

# SYLVANIA CELLOPHANE

**Made only by SYLVANIA INDUSTRIAL Corporation**

***Manufacturers of cellophane and other cellulose products since 1929***

*General Sales Office:* 122 E. 42nd St., New York 17, N. Y. ★ *Works and Principal Office:* Fredericksburg, Va.

SYLVANIA CELLOPHANE

• Reg. Trade Mark

Cartons & Boxes | Package Planning

Glass & Closures | Bags & Envelopes

Labels, Seals, Tags | Cans & Tubes

Adhesives | Plastics

Machinery | Wrappings & Coatings

Shipping | Equipment

## If you sell any of these Goods and Services to the Packaging Field—

## Your message belongs in the 1945 PACKAGING CATALOG

The "tabbed" references, noted above, embody Packaging Catalog's *extensive* as well as *intensive* coverage of the various industries comprising the packaging field.

Because of its *extensive* value, Packaging Catalog is regarded as the Encyclopedia of Packaging . . . and because of its *intensive* divisional arrangement Packaging Catalog is invaluable to the advertiser—makes it possible for his message to tie right into the section closest to his own interest.

1945, by every indication at hand, promises to be packaging's most eventful year. Many materials, machines, and services will probably have returned to mufti. Many new opportunities will swing into action. The year will be one of tremendous packaging progress . . . And marching with it as the central focus for reference and guidance will be the 1945 Packaging Catalog! . . . Packaging's *one* and *only* year book! . . . the book whose advertising pages are industrially vital and valuable!

Due to current paper restrictions the issuance of space requires prompt action—*immediate* reservations.

1945

# PACKAGING CATALOG

*The Encyclopedia of Packaging*

PUBLISHED BY PACKAGING CATALOG CORPORATION

122 EAST 42nd STREET, NEW YORK 17, N. Y.

Washington • Cleveland • Chicago • Los Angeles

# PACKAGES by MILPRINT

*means* BETTER *design* BETTER *protection*

**Attention and display value, protection and convenience . . . these are the most vital factors which make for a successful consumer package. And with the intense competitive conditions just ahead, those factors assume even greater significance. Whether your product is Cheese or Cosmetics, Hosiery or Apple Pie, this organization has the know-how and resources to provide you with the kind of packages that can stand up to the toughest postwar competition. Those are the kind of packages you will need. Why not write and consult us today?**

PLANTS AT - MILWAUKEE · PHILADELPHIA
LOS ANGELES ★ SALES OFFICES IN -
NEW YORK · CHICAGO · PHILADELPHIA
SAN FRANCISCO · BOSTON · ST. LOUIS

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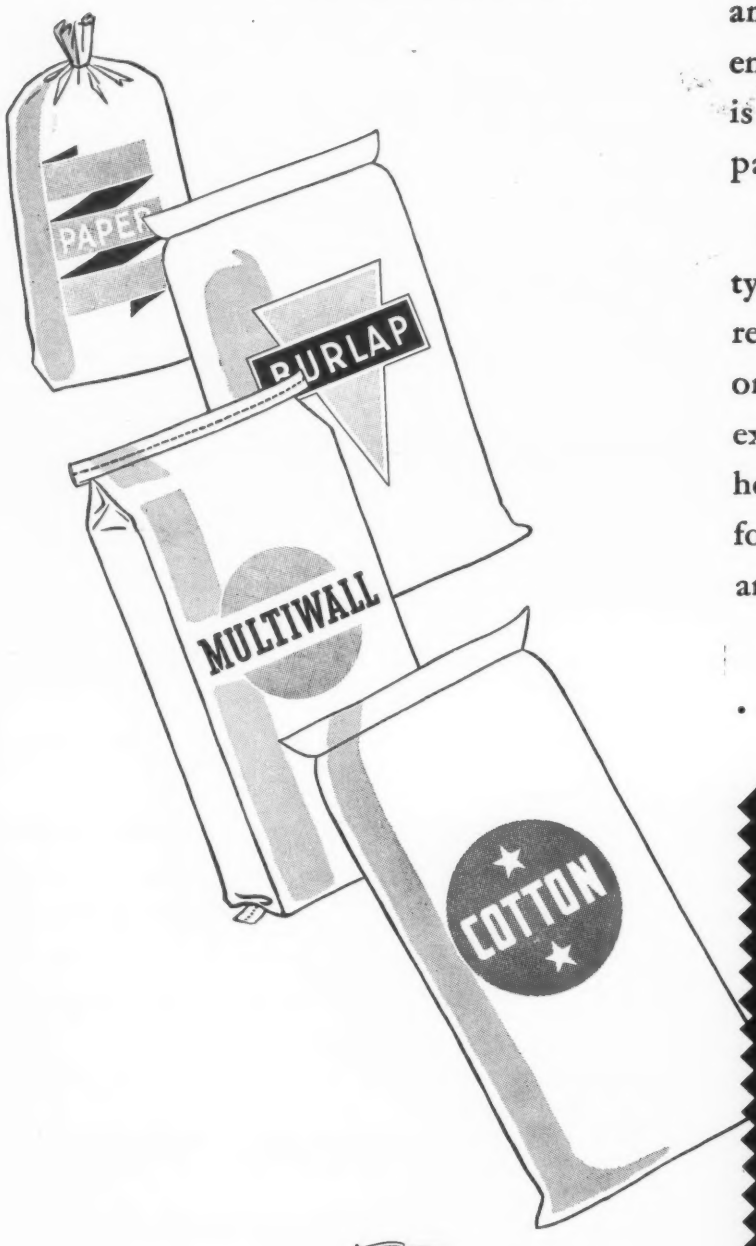
GRAND RAPIDS

**SPECIALISTS IN DISPLAY PACKAGE DESIGN AND DEVELOPMENT**

# Whatever's the BEST BAG FOR YOUR USE

## . . . we make it!




WHEN you buy your bags from Bemis, among the important advantages you enjoy is this: You can buy whatever type is best for your particular use—cotton, paper, multiwall, burlap or waterproof.

Bemis is a leading producer of *all* types of bags and consequently has no reason to high-pressure you toward any one type. We have no favorites. If our experienced packaging specialists can help you to determine which is the best for your use, you may be sure that their analysis and advice will be unbiased.

Whatever's the *best bag for your use* . . . we make it.

**BEMIS BAGS**

**BEMIS BRO. BAG CO.**

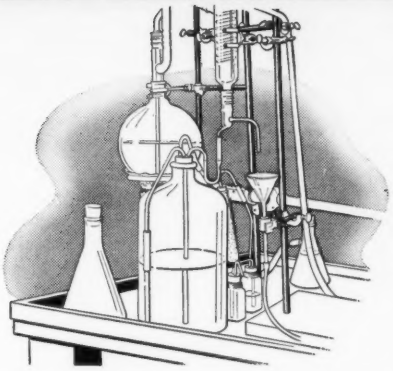
OFFICES • Baltimore • Boston • Brooklyn • Buffalo • Charlotte Chicago • Denver • Detroit • East Pepperell • Houston • Indianapolis Kansas City • Los Angeles • Louisville • Memphis • Minneapolis Mobile • New Orleans • New York City • Norfolk • Oklahoma City Omaha • Peoria • St. Helens, Ore. • Salina • Salt Lake City • San Francisco Seattle • Wichita • Wilmington, Calif.

BETTER BAGS SINCE 1858

ARMY E NAVY *East Pepperell, Mass.*

# THIS "WINKING EYE" HELPS MAKE BETTER GLASS

***It gives accurate test data to research men***



FOR many experiments with glass, water of absolute purity is essential. A most interesting technique used in glass research is employed by Armstrong's glass chemists to provide this highly pure water. In this process, a "winking eye" plays an important part.

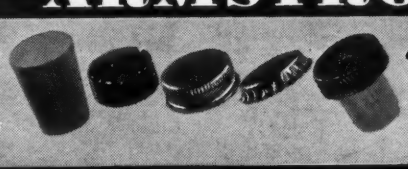
The water is first distilled—not just once, but twice—the final distilling in a specially designed glass still, and the water is treated to remove all air and carbon dioxide. But even twice-distilled water may contain minute impurities. Since even the smallest quantity of any impurity might affect the accuracy of delicate experiments, it's vital to have an absolute check on the water's purity. The "winking eye" provides this check.

Two electrodes connected to the "winking eye" conductivity meter are placed in the water to be tested. A voltage is impressed on the electrodes. The "winking eye" indicates the amount of current passing through the water. Since the amount of current flow depends upon the impurities present in the water, the glass chemist can tell from the "winking eye" the exact purity of the water.

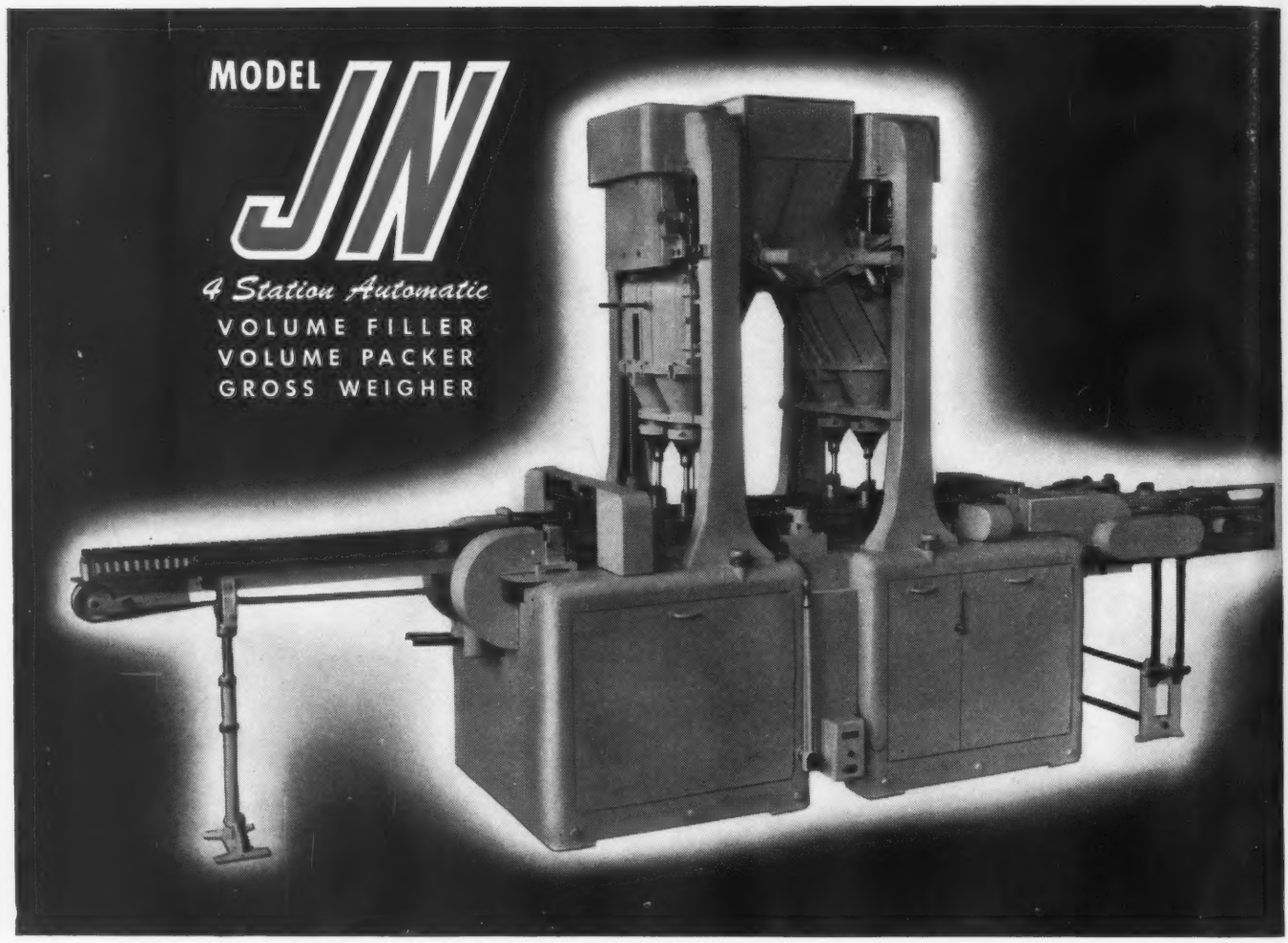
The painstaking care and delicate instruments used to check this one small factor in glass research are typical of the way in which Armstrong's glass chemists, physicists, and engineers carry on all their many projects. To their careful, persistent work is due, in large part, Armstrong's continuing reputation for top-quality glass.

Further interesting stories about the making of top-quality glass are contained in Armstrong's illustrated booklet, "Men and Glass." For your free copy, write to Armstrong Cork Company, Glass and Closure Division, 5911 Prince St., Lancaster, Pennsylvania.

**ARMSTRONG'S GLASS**



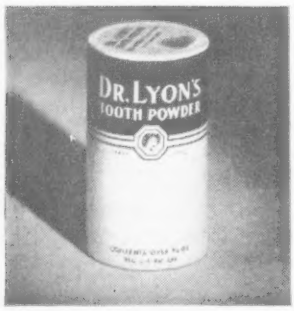
*and* **ARMSTRONG'S CLOSURES**




## ...for all types of powdered, granular and paste materials

The new Model JN is unique in that it will pack, or pack and weigh, automatically. It can be adjusted for controlled pressure—the machine can be adapted easily to suit the size and type of container required, and the material handled.

The many new automatic features, plus the speed and accuracy of the JN, soon pay for the machine through savings on labor costs alone. It will pay to get full details and specifications—there are many features never available before—write today!




Filled and packed on the Model JN at a speed of 120 per minute, with an accuracy within 1/8 ounce.

*Send U.S. details on any of your packaging problems—we have the machines and the engineering background to help solve them.*

**US** *Automatic Box Machinery Co. Inc.*

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For Postwar Package Planners

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## SCREWDRIVER "STAYS PUT"...

## GELATIN THAT GLISTENS...

**IDEA NO. 1** "Try us all; pick your favorite," says this package. This idea encourages customers to sample *other* products by making it convenient to buy two varieties—or more—as a unit.

**IDEA NO. 2** The package serves as a permanent holder for this tool so often mislaid. It begs to be bought—lets customers "obey that impulse"—and impulse-buying sells a lot of goods.

**IDEA NO. 3** Food products like gelatin need protection against everything but eyes. Show 'em and sell 'em! This unit introduces visibility to a product seldom seen . . . offers an invitation to buy.

### Basic Themes of Postwar Merchandising

Here are six fundamentals that will help to lower postwar distribution costs and speed up turnover. Use them to check *your* postwar package plans.

1. **SELF-SERVICE:** Emphasis on self-selection and display value.
2. **CONVENIENCE:** Size, shape, quantity, ease of use are predominant factors.
3. **INFORMATIVE LABELING:** Need for concise information, terse selling message.
4. **IMPULSE BUYING:** A high percentage of all buying done on impulse.
5. **PROTECTION:** Adequate protection geared to rapid turnover.
6. **VISIBILITY:** 85% of all buying done through the eyes. Visibility of primary importance in the package of the future.

Would you like to see more postwar packaging ideas? Just write: E. I. du Pont de Nemours & Co. (Inc.), Cellophane Division, Wilmington, Del.

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DU PONT

Better Things for Better Living . . . *Through Chemistry*

**VISIBILITY . . . a powerful force in modern merchandising**

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**With the experience gained during the present crisis together with that of the past, we can readily say FITCHBURG FINISH papers will again take their rightful place in the post-war packaging and printing fields.**

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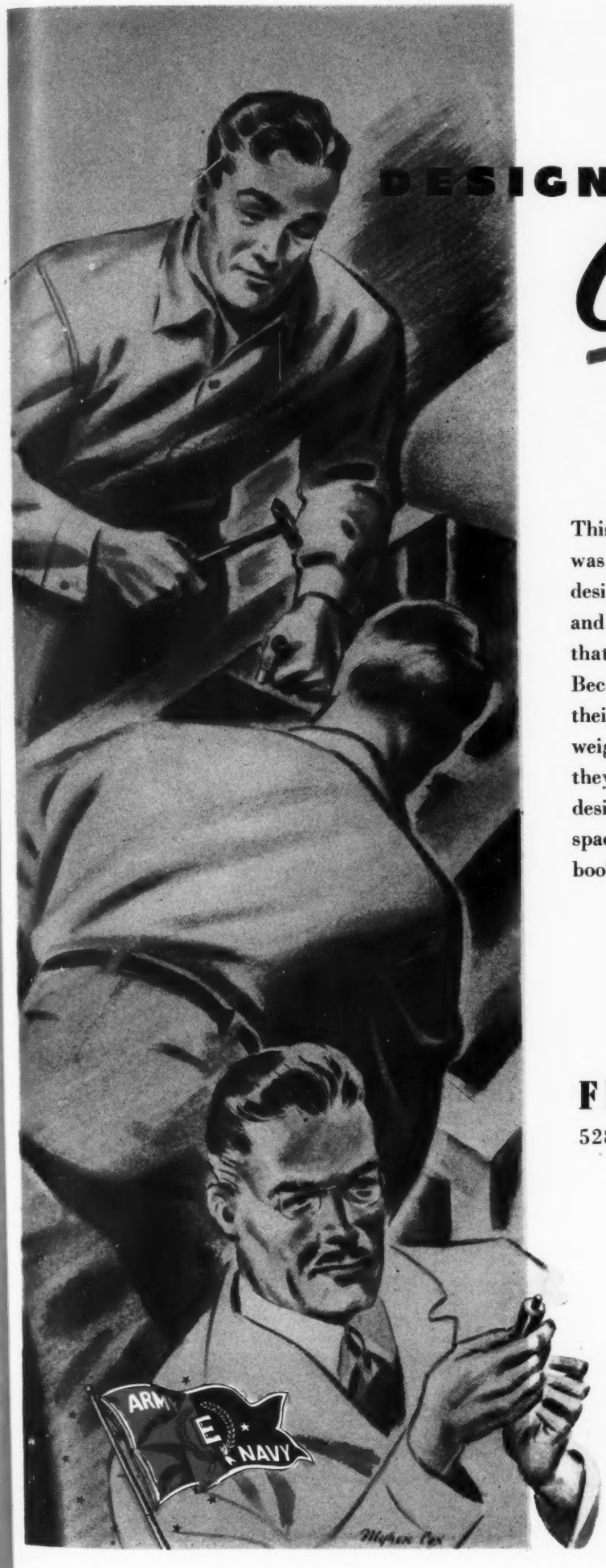


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# *One job Better*

This company was founded seven years ago when it was foreseen that a demand would arise for machinery designed to solve specific problems. Palmer-designed and Palmer-constructed machines meet special needs that cannot be handled as well by standard machinery. Because many Palmer machines are custom-built for their purposes—whether it be packaging, processing, weighing, counting or filling, or all simultaneously—they perform with greater efficiency, greater speed (if desired), and with greater economy in operational and space-rent costs. Send today for your copy of a new booklet, "Packaging Predictions."

PALMER
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*Packaging Development Laboratory*
*Special Machinery Manufacturers*

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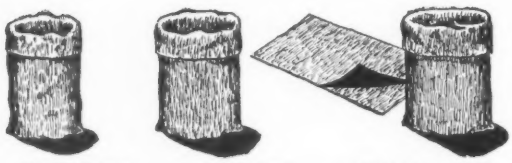

WAX CREPE • PLAIN CREPE • ASPHALT CREPE

YOUR customers receiving department weights will check with yours when your powdered products are protected in shipment with Ralston sift-proof bag and barrel liners. These sturdy, moisture-repellent and sanitary bags are protecting shipments to all fronts as they have been doing on domestic shipments for many years.

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*Founded 1890—Incorporated 1918*

Saturated Papers — Building Papers — Reinforced Papers — Duplex Papers — Case, Barrel and Bag Liners — Creped Papers — Laminated Specialties

*Sales Office*—220 E. 42ND STREET, NEW YORK, N. Y.

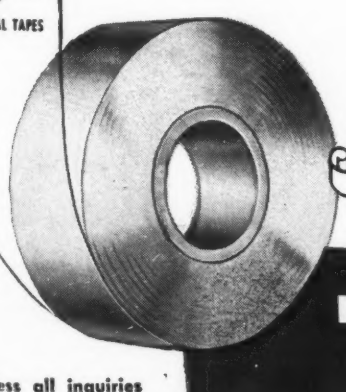
At last we dare to hope for a change in America's industrial scene. Reduction in the manufacture of war machinery will naturally be followed by the increased production of articles of peace. But the war-learned techniques of fast, accurate production will be applied to speed the supply to a vast demand.

"FILMONIZE" Self-Sealing TAPES were created to fill the war-born demand for a seal against water penetration. Their bright colors will add glamour to your *new* packages. "FILMONIZE" numerical and alphabetical TAPES are assembly aids for wire or part identification in production. Their use will be continued in *new* cars and *new* radios for tomorrow. "FILMONIZE" Self-Sealing TAPES will hold on damp surfaces, waxed surfaces, hot or cold surfaces.

"FILMONIZE" Self-Sealing TAPES have proved in war that their versatility will be employed in peace.

The target for tomorrow is a *higher* level of production. To achieve it, plan now for a greater use of all the production short-cuts "FILMONIZE" Self-Sealing TAPES can assure your plant.

*Let your "FILMONIZE" TAPE Distributor show you how "FILMONIZE" can work for you.*



**Filmonize**
TRADE MARK REG
**SELF-SEALING TAPES**

**"FILMONIZE" SETS NEW STANDARDS**

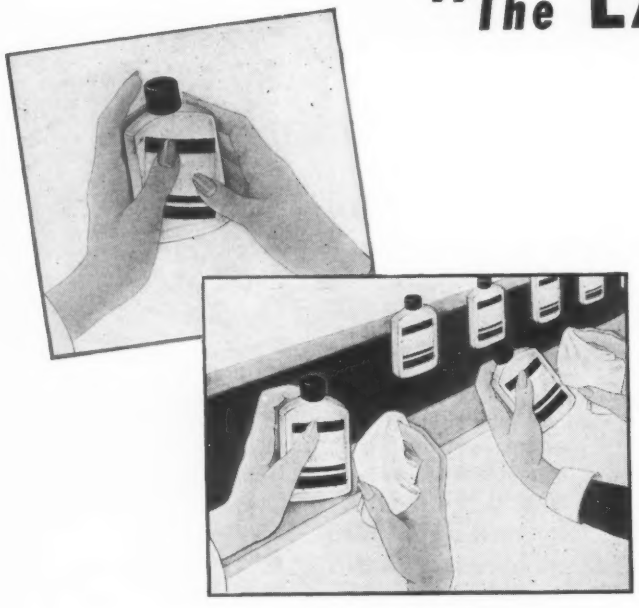
- *Easy to use . . . strips cleanly off the roll.*
- *No "curl-back"... no tangle... no waste.*
- *Fadeproof colors . . . printing sealed in.*
- *Widths from ½" to 18" throughout the line.*

**INTERNATIONAL PLASTIC CORPORATION**
MORRISTOWN, NEW JERSEY

Address all inquiries to Dept. 41

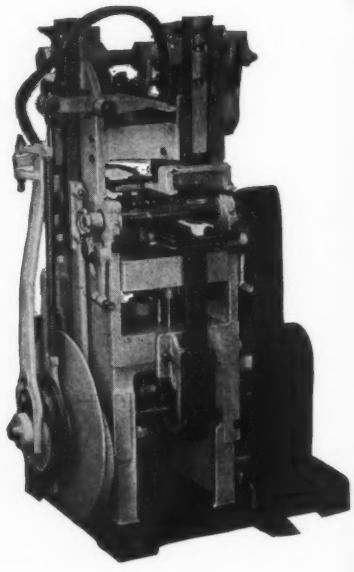
# LABELING—*at its best; economical, fast,— and perfectly registered . . . means*

# *"The* LABELRITE *method"*



There are years of satisfaction in buying a LABELRITE; years that repay you for taking the time to select your labeling equipment on the basis of doing *better* work, doing it easier, and requiring less attention in either operation or adjustment.

- **no wiping of bottles**
- **petty-cash change-parts**
- **self-cleaning feature**



Compare the number of parts; the function of each part, the exclusive features which have been incorporated in the Labelrite design, and you will see why Labelrites enjoy their outstanding reputation. True—war essentials may delay delivery of the unit you require, but an order placed NOW, will take precedence from its dating . . . Place your order *before* government restrictions are modified.

***Get* FACTS—*and you'll get* LABELRITES!**

## NEW JERSEY MACHINE
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# YOUR PACKAGE CHANGES—

America is now confronted with a new era involving Reconversion and its problems. ¶ Industries are preparing their advertising and merchandising campaigns for new, improved peacetime products. They are wisely considering the importance of the package as a "salesman". ¶ The Dejonge organization, designers and manufacturers of better packaging papers, has experienced many like periods since its founding in 1846. During those times Dejonge has cooperated with industry, solving its packaging problems, producing papers outstanding in beauty and appeal, combined with precise and careful workmanship. ¶ Again, let Dejonge papers solve your problems when YOUR PACKAGE CHANGES.



## LOUIS DEJONGE & CO.

345 BROADWAY • NEW YORK, N. Y.

# *STILL Public Job No. 1*

ONE of the most crucial battles on the home front still goes on — the battle for paper.

Your Uncle Sam is in a spot. He needs 8,000,000 tons this year. And he is not getting them.

There is still time — if *you* will help.

Our armed forces use paper for more than 700,000 items. It is being used up at a faster rate than ever before.

That's why all your old newspapers, magazines, cartons, fiberboard, bags and wrapping paper are needed — right down to the last ounce.

The American Legion is in the fight to salvage paper. The Boy Scouts, Girl Scouts, Brownies, school and city groups are working hard.

But the answer is still up to you — 100,000,000 plain citizens who can put this drive over the top if you'll just get busy.

Save every scrap of paper, paperboard or cardboard you can get your hands on. Bundle it for the collectors. Then, if there is no regular collection where you live, phone the American Legion, the Scouts or the City. Be sure your weekly bundle is collected.

Urge your neighbors to do the same.

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*EXECUTIVE OFFICES:*
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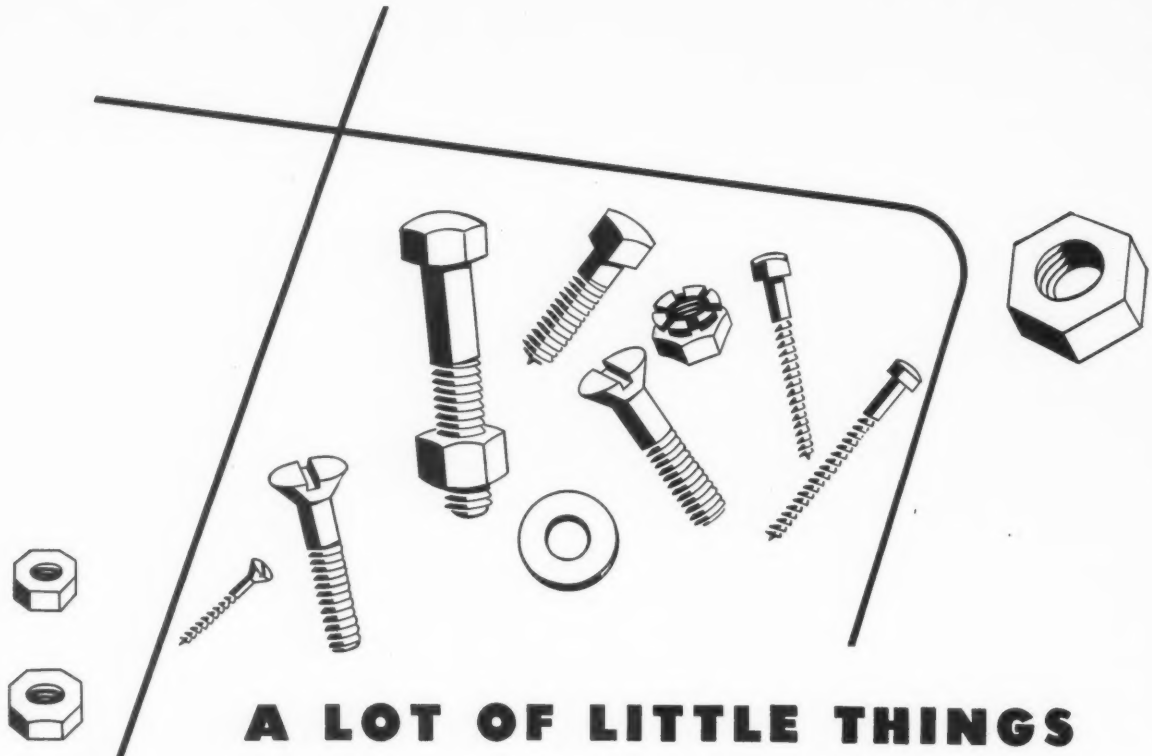
# HONORED GUEST

**No matter where he's stationed in this angry world, he's still the honored guest at the Thanksgiving dinner. Without him we'd have no assurance that there will always be Thanksgiving Day.**

**But grateful thanks to him is not enough. Practical, helpful thanks is necessary. BONDS! *WAR BONDS!* He buys them regularly. We must buy more than ever before during this Sixth War Bond Drive.**

**Let's hurry the end. Let's make next Thanksgiving a peaceful one.**

**HAZEL-ATLAS GLASS COMPANY** **Wheeling, W. Va.**



# A LOT OF LITTLE THINGS

Bolts, nuts and screws play a part in building almost any machine . . . a lot of little things but each one highly important to the whole.

Glass containers, too, are made up of a lot of little things . . . little things in their manufacture which make the difference between a product that is just average and one of outstanding quality. Constant insistence upon precision and accuracy, continuous checking of methods and workmanship, steadfast adherence to the idea that there are no unimportant details . . . these are the things which make glass containers really satisfactory in use. And over the years, these are the things which customers have come to expect from Carr-Lowrey.

Yes, Carr-Lowrey glass containers embody a lot of little things you don't see. But those little things are the reason why Carr-Lowrey has long been the choice of many leading manufacturers of drug, cosmetic, household and food products.

**CARR-LOWREY GLASS CO.**

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**TIMES THAT CHALLENGE THE SOULS OF MEN AND THE STRUCTURE OF MACHINES, MATERIALS AND EQUIPMENT — THESE HAVE BEEN AMERICA'S LOT FOR THE PAST THREE YEARS**

Keller Dorian has met this challenge with its broad knowledge of paper and the production of

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2. Thermoplastic Coated Stocks for Heat Sealing.
3. Metal Coated Moisture-Vapor-Proof Barriers.
4. Light Proof Papers for Contents Preservation.
5. Metallic Electrical Insulation Papers, Having Either Dielectric or Conductive Values — Radial and/or Longitudinal.

*for the unusual in paper consult with*

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ALSO MANUFACTURERS OF EXTRUSION & INJECTION MOLDED PRODUCTS

# *All these—*

*(and many others too)*

## get BETTER protection

### against spoilage or breakage in handling

Clearsite gives you all the advantage of visibility of contents, but the resilient, *shatterproof* protection of Clearsite means protection despite accidents. Colorfully "labeled-in-process" Clearsite is attractive, durable, economical. Ask to see

## SHATTERPROOF
## SEAMLESS ~ ~ FEATHERLITE

# Clearsite*

* Registered U. S. Pat. Off.

• *Our Package-Engineering Staff will gladly work with you.* •

CELLUPLASTIC CORP.

## CELLUPLASTIC CORPORATION

40 AVENUE L NEWARK, N. J.

*WEST COAST REPRESENTATIVES:* CONTAINER SERVICE CO., 1266 North Western Avenue, Los Angeles 27, Cal.

# *The Purity of Crisco is Protected*

## BY "CEL-O-SEAL"

▶ When a leading manufacturer chooses CEL-O-SEAL to seal glass containers, he's looking for product *protection*. And he gets it.

The CEL-O-SEAL cellulose band around the Crisco paper cap seals in purity . . . seals out dust and other impurities. CEL-O-SEAL assures a safe, clean voyage for the product—from the point of manufacture all the way to the consumer's kitchen. These bands hold closures securely in place.

CEL-O-SEAL bands are available in smart, distinctive colors. For a wide variety of products they provide a way to increase product protection and sales appeal. We shall be glad to discuss possible applications to help solve your packaging problems. Write today for complete details.

*Invest in Victory—Buy War Bonds*

**CEL-O-SEAL bands are sold by:**

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# DU PONT CEL-O-SEAL BANDS

TRADE MARK

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REG. U. S. PAT. OFF.

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*Determining absolute viscosity with water-jacketed viscosity Pipet in one of the Paisley Laboratories.*

# GET THE *Correct* ADHESIVE!

IF it's an adhesive problem, *"Put it up to Paisley!"* That's a mighty safe rule to follow no matter what your need may be. For here, the ONE finest adhesive for your specific requirement is determined with *scientific accuracy.* There's no guesswork . . no "pot-shot" recommendation. All factors involved in each adhesive operation are carefully studied by our experienced laboratory staff.

The *correct* formula is established then checked for retention of proper viscosity and body, for storage life, machinability, emulsion stability, uniformity of color and cohesive spread and other properties. Then rigid tests are conducted of adhesive qualities and performance on the actual materials to be bonded.

Don't just buy "a drum of glue" . . Buy *"Paisley Scientific Adhesive Service".* You'll get the CORRECT adhesive plus all the benefits of perfect performance, low maintenance costs, and minimum loss from interrupted production. Write us for an Adhesive Problem Data Sheet. There's no cost or obligation involved.

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## HIGH FIDELITY COLOR REPRODUCTION for PACKAGING MATERIALS

This new L. B. P. process opens up broad possibilities in reproducing beautiful color illustrations on folding boxes, labels and inserts . . . boxboard and paper alike . . . coated or uncoated. Developed primarily to meet postwar packaging requirements, it is available now to a limited extent. Why not see for yourself how good FIDEL-I-TONE really is and how it can be applied to your own packaging requirements? Write us for samples and further information.

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### FINER SCREENS

With Fidel-i-tone super-etched alloy plates, the use of much finer screens is possible, even on uncoated boxboards and paper. Fidel-i-tone reproduction is delicate and faithful.

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Because Fidel-i-tone plates are chemically resistant, certain brilliant pigments that would destroy images on conventional plates can be used. Fidel-i-tone colors are more intense and less subject to marring.

### GREATER UNIFORMITY

Fidel-i-tone plates are tough and close grained . . . almost indestructible. The 250,000th impression is like the first. You get uniform color and detail, regardless of the length of run.

*Folding Boxes*
*Labels*
*Inserts*

# The Lord Baltimore Press

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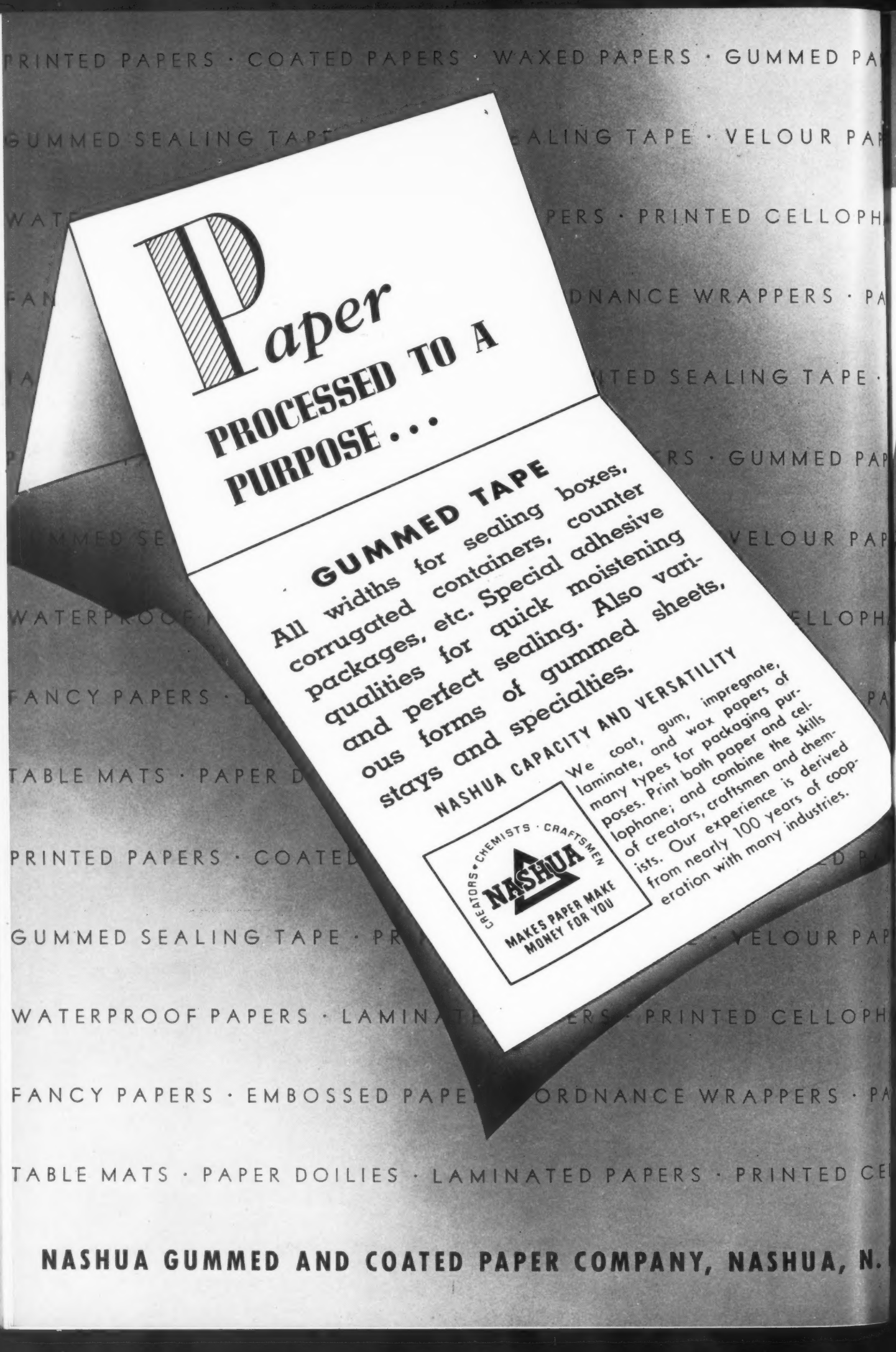
*Sales Offices:* 595 Madison Ave., New York 22, N. Y.—ELdorado 5-4180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PROCESSED TO A PURPOSE . . .
GUMMED TAPE
All widths for sealing boxes, corrugated containers, counter packages, etc. Special adhesive qualities for quick moistening and perfect sealing. Also various forms of gummed sheets, stays and specialties.
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We coat, gum, impregnate, laminate, and wax papers of many types for packaging purposes. Print both paper and cellophane; and combine the skills of creators, craftsmen and chemists. Our experience is derived from nearly 100 years of cooperation with many industries.
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NASHUA
MAKES PAPER MAKE MONEY FOR YOU
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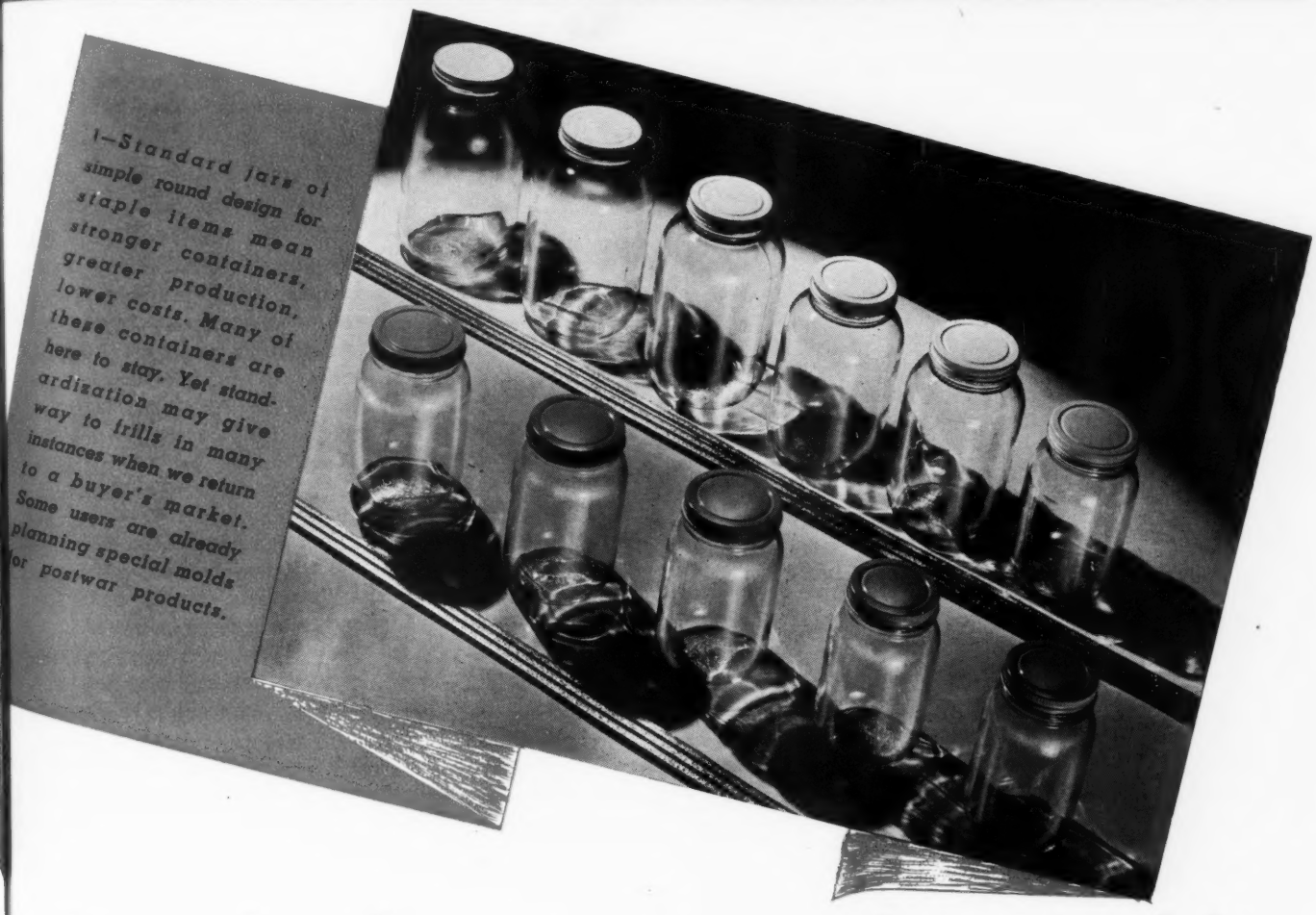
MODERN PACKAGING
VOLUME 18 NOVEMBER, 1944 NUMBER 3


1—Standard jars of simple round design for staple items mean stronger containers, greater production, lower costs. Many of these containers are here to stay. Yet standardization may give way to frills in many instances when we return to a buyer's market. Some users are already planning special molds for postwar products.

# Standard vs. custom glass molds

Demands for glass containers during the war set in motion a program of standardization in sizes and shapes of containers that might never have been attempted had it not been for the emergency.

To make more glass containers that could be used as alternates for cans and other scarce supplies the glass container manufacturers and the Government pushed standard shapes and sizes that would make greater production possible.

Through such standardization, production on glass-making machines can be increased, because considerable time is eliminated in changing the machines from handling one mold to another and much labor is saved by eliminating the making of new molds. Mass production of a limited number of designs also means lower cost.

At first, giving up specially shaped containers seemed a great hardship to many companies, whose jars and bottles were part of their trademarks. To many companies whose products demand a specialized container it still is. However after two and one half years of standardization, it appears that standardized glass is here to stay in many lines of products.

MODERN PACKAGING recently asked a number of users of glass containers in various industries what they thought of the glass container standardization program and whether they would prefer to go back to special molds after the war. The answers give many side lights on future development.

In general the replies indicate that users of glass containers thought that the wartime standardization program had been well planned and in many instances they said that they would not go back to their special molds after the war. They like the easier handling of standardized containers, both on production lines and through the channels of distribution. Some said that trade identification was not sacrified because they had learned how to maintain trade identity just as well through individualized labeling as they could with special molds. This feeling was most general, however, in certain food lines, where standardization programs were begun many years before the war, when the glass companies, to win more business, introduced improved standard food jars of light weight and in round shapes that gave them maximum structural strength. It was also the feeling with regard to certain drug bottles, such as round blakes, which have been standardized by the Glass Container Assn. since 1924.

In many lines, however, the return to specialized molds is

2

**2**—*Sharp & Dohme use only 15 private mold bottles for their products out of a total of 200. They have been able to retain these private molds, except in isolated and unimportant instances where low usage made it inadvisable. This company was the originator of the "Spasaver" bottle (shown back row center) which was among the winners in the 1942 All-America Package Competition.*

still hoped for. A condiment maker, who has used the same bottle for 70 years, said it would impair his merchandising seriously to change this bottle. He didn't have to change it during the war since he was allowed to use his old molds as long as he didn't have to make new ones.

Many of the companies who felt that the glass standardization was well handled as a wartime emergency are still hopeful to return to their special molds after the war. Such an opinion was well expressed by P. J. Ritter Co. in a comment concerning their catsup bottle packed in a standard container for the duration.

"In general we believe the planning has been well done," said Ritter. "We realize that in wartime standardization and simplification are necessary and in the case of glass containers, we believe the planning has been just about right. However, we will all be delighted to see the day return when individuality of packages will once more be possible."

At this time, General Foods sees re-adoption of specialized glass containers only in its Snider sauce lines. Despite labels, it is felt that the specialized bottle used before the Government required standardized glass containers is distinctive enough to warrant re-adoption when the order is relieved.

There has been no need, the company said, to change the glass container for Snider vegetables, one of the earliest successful glass packs. This container is expected to be retained after the war.

Certo, another glass-packed General Foods product, has been packed in a close-to-standard bottle and there is no change seen for it at present.

Everybody who remembers the distinctive cocktail-shaker type bottle used by College Inn for tomato juice cocktail can appreciate this company's desire to return to special molds as soon as government restrictions are removed. This company feels that trade and product identity have been sacrificed by the use of standard shapes and sizes, which affected a major portion of its volume of production.

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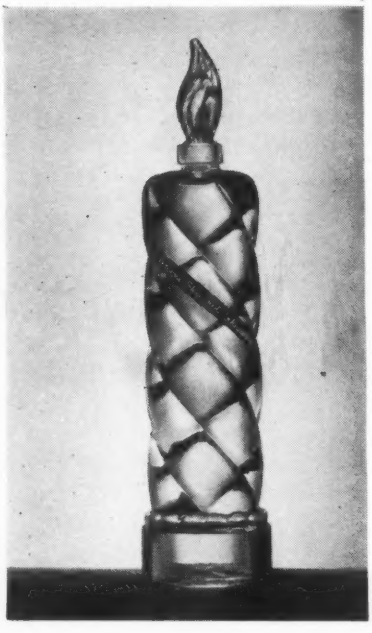

**3**—*These individualized bottles for Pond's illustrate how important is the shape of a bottle for trade identification.*
**4**—*Perfume houses are particularly covetous of exotic molds like this.*

The same feeling is expressed by The Frank Tea & Spice Co. which hopes to return to special molds on some items although it feels the Government specs for glass containers were well designed for the emergency.

Martin Bros. Co., another food manufacturer, states, "We wish to go on record that undoubtedly there are many special designs which have definite consumer appeal which we would like to use when the glass restrictions are lifted. It is true that product identity can be maintained by proper labeling of standard glass containers, but we hope the time is not too far distant when we can again offer some new and distinctive packages of glass-packed foods."

A company which expresses complete satisfaction with the standardized bottles adopted since the war is Otto Seidner, Inc. About 50% of the glass it uses is now standard design. The company feels that with labor conditions as they were, this change helped them hold their production; that the standard glass was as easy to handle as previous special designs, and that individualized labels on standard bottles will maintain individuality. They will not change back when restrictions are lifted.

Like food packing, the drug industry is one in which considerable advantages are derived from the use of standardized glass containers. Winthrop Chemical Co. states, for example, that they have never been an advocate of private molds except in those cases where standard molds would not adequately carry their product. They say they have derived great benefits from using standard containers and, therefore, when the Government placed restrictions on private molds, they were not inconvenienced in the least. They are now using standard blakes, wide-mouth round packers and Boston rounds. In a few isolated instances where the blakes do not permit sufficient clearance in the neck dimension for tablet insertion they are using a private mold oval. This is only to obtain a larger neck opening. Future intentions also lean toward standard molds.

Sharp and Dohme use more than 200 different types of bottles. Of this number, only 15 (see illustration) are private molds they hope to retain. They have been able to retain their private molds, except in isolated and unimportant instances where low usage made it inadvisable.

This company was the originator of the "Spasaver" bottle which won a 1942 All-America Package Competition award and is especially anxious to retain this.

In 1924, through the efforts of the A.M.A. and the G.C.A., tablet bottles were standardized and the standard line of blakes set up. Sharp & Dohme would recommend that this procedure be followed on the fluid pharmaceutical bottles. A standard line, the company says, probably would be acceptable for use in packaging competitive items where the sales are limited to the purchase of quantities too small to represent a "run" for the glass houses. Most drug houses, of course, would like to run their specialities in private mold containers, and Sharp & Dohme suggests that possibly the Packaging Institute could pioneer this project.

In cosmetics, standardization of bottles has not taken very

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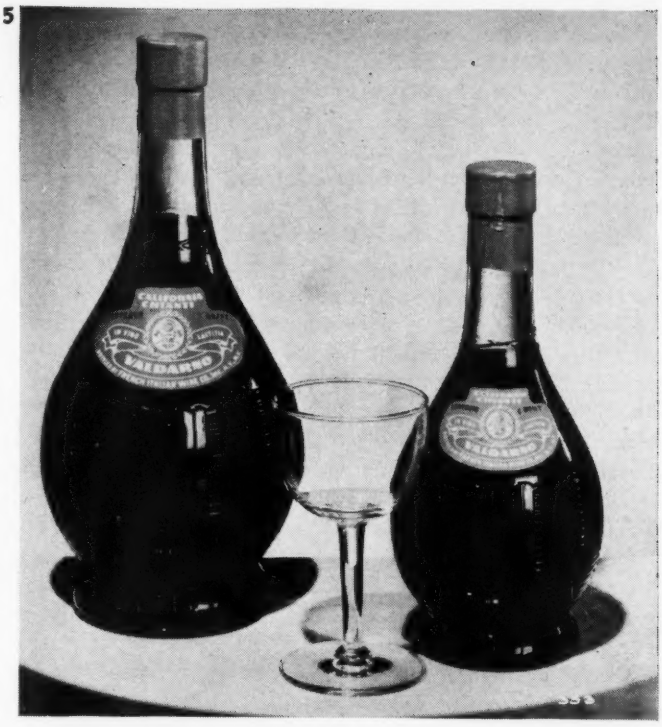


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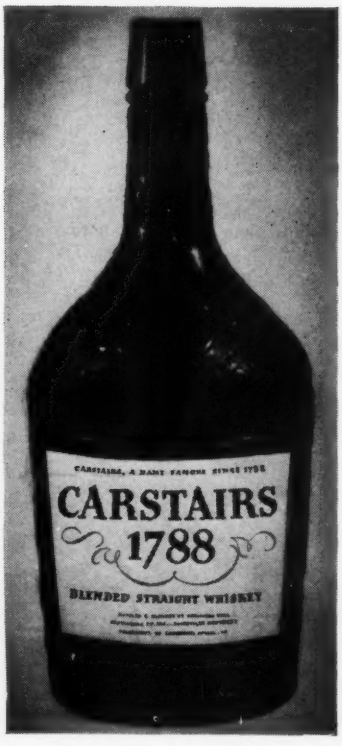


*5 and 6—Wineries and distilleries were among the first to feel effects of wartime glass standardization. Bottles like these have been replaced by wartime Victory bottles. After the war, the wine and liquor industry says it must go back to private molds.* **7**—*Standard bottles cannot take the place of such prewar designs as these for Seagram's Ancient Bottle gin or Carstairs' 1788.*

well. Manufacturers are anxiously awaiting the time when they can again individualize the styles of their bottles. For perfumes, some cosmetic houses got hand-made cut crystal bottles from France. As a general thing, American glass makers are geared to quantity production and under normal conditions the volume of business in hand-made bottles is not large enough to justify an American manufacturer going after this type of business. Users of such glass, however, say they would be glad to place orders with American manufacturers if they could obtain a comparable product.

For toiletries and cosmetics, the shape of the bottle often identifies the scent or the brand, and the producers of these products are extremely covetous of these shapes and sizes. In many cases, cosmetic houses have been able to keep these special designs as long as they could use their existing molds, but they would be very unhappy to relinquish them.

As expressed by G. D. Runnels, president, Dermetics, Inc.: "If I had adopted standard molds, I certainly would go back to my special molds the minute Government restrictions were removed. Trade and product identity are sacrificed because the individual style of our bottles definitely designates our merchandise and since it has been the contention of the Federal Fair Trade Act that identity of the merchandise should be clearly established by proper labeling and name display, surely the individual style bottle for our particular line helps further in establishing this identity.

"It certainly would be a sad monotony if all merchandise were packed in the same bottle, if everybody had to ride in the same kind of a car, if everybody had to wear the same type of suit and live in the same type of house. It has always been my contention that people develop initiative, the very thing which has made this the leading nation of the world, when they strive to have something different and better than their neighbor. In so doing, they certainly inspire their neighbors to do likewise. I have not once in my lifetime envied my neighbor's progress, but thousands of times have been inspired by his progress. I think every red-blooded American should stand on his hind legs and fight for this privilege."

The liquor and malt beverage industries were among the first to feel the serious effect of wartime glass simplification and standardization. In May 1941 the Government froze all glass container molds to existing shapes (Order L-103). If you were using a special mold, this meant that you could not have a new one designed. Or if you desired a custom mold for your glass package, you could not get it. You could, of course, use your old custom molds as long as they would last, but when they were worn out you could not get new ones, but would have to get along the best way you could with standard stock designs.

Glass containers for distilled liquors were limited to four sizes: 1 quart (32 fluid oz.); $^4/_5$ quart (25.6 fluid oz.); 1 pint (16 fluid oz.); $^1/_2$ pint (8 fluid oz.). The manufacture of glass containers for all other liquors (such as cordials, cocktails and specialties) was limited to capacities of $^1/_2$ pint (8 oz.) or more. This eliminated miniature sizes. The order also provided that after January 1, 1943, all glass containers for the aforementioned products had to be standard containers of these sizes in accordance with Government specifications. These are standard round bottles for the quart and fifth sizes and standard flask-type bottles for pint and half-pint sizes.

A similar program of simplification and standardization was put into effect at the same time for malt beverages—beer, ale, porter and stout. These were limited to containers of 12 fluid oz., 1 quart (32 fluid oz.) and one-half gallon (64 fluid oz. of certain specified glass weight). After issuance of that order, no molds might be replaced except those specified as standard in the Government order and after January 1, 1943, only standard glass containers for malt beverages were permitted to be produced.

This was a tough blow to companies who used molds that were essential to merchandising programs. It also affected seriously the makers of liqueurs, liquor specialties and wines.

The attitude of the wine and liquor industry may be summed up in the words of one prominent distiller who said, "We had a meeting in the selling and advertising end of this business and decided we *must* go back to our own molds as soon as possible."

There are many advantages to standardization and simplification of glass containers—savings in cost, in handling, stronger containers with less breakage, greater production. Glass container manufacturers in their current advertising are pointing out these advantages to the postwar user of glass containers. On the other hand, many of the foregoing comments indicate that when competition is keen the sales appeal of a special mold may often outweigh some of the advantages of standardization. When metal and other materials come back, there will also be greater competition for business among container manufacturers themselves. Despite its many advantages, standardization may give way in many instances to this competition when we return to a buyer's market.

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*8—Standard jars for staple items like coffee mean economy and faster production. 9—Custom and stock mold container for P. J. Ritter Co. catsup. Company says it will be delighted to see return of individualized packaging.*

1—*More than a month old, coated grapefruit is firm and plump; unprotected fruit, shriveled and soft.*

# *Invisible package . . . long life to fruits and vegetables*

The combined shipping and store life of the fragile tomato has recently been increased from the usual four to six days to a period of from sixteen to twenty days. Lemons, the most perishable of citrus fruits, may now be firm and fresh and radiant of color four months after harvesting. These and many other modern miracles have been brought about by research chemists whose efforts are devoted exclusively to prolonging the life of fresh fruits and vegetables.

The result of shrinkage in lemons becomes evident within two weeks after packing for the consumer market. Ordinarily, after a period of four months they are shrunken within a hard and blackened rind. Packaging techniques have correspondingly increased the commercial life span of fresh cucumbers, cantaloupes and many other varieties of perishable produce. Considerable experimental progress has been made and is continuing to be made with other fruits and vegetables.

These enlightening developments have been based upon a number of interesting and little-known facts. Fruits and vegetables are equipped with a system of pores through which they breathe. There is a system of connection between the interior and exterior which fuses, or holds, the skin to the fruit. Also, when fruit ceases to breathe, decay or "fermentation" (anaerobic respiration) begins.

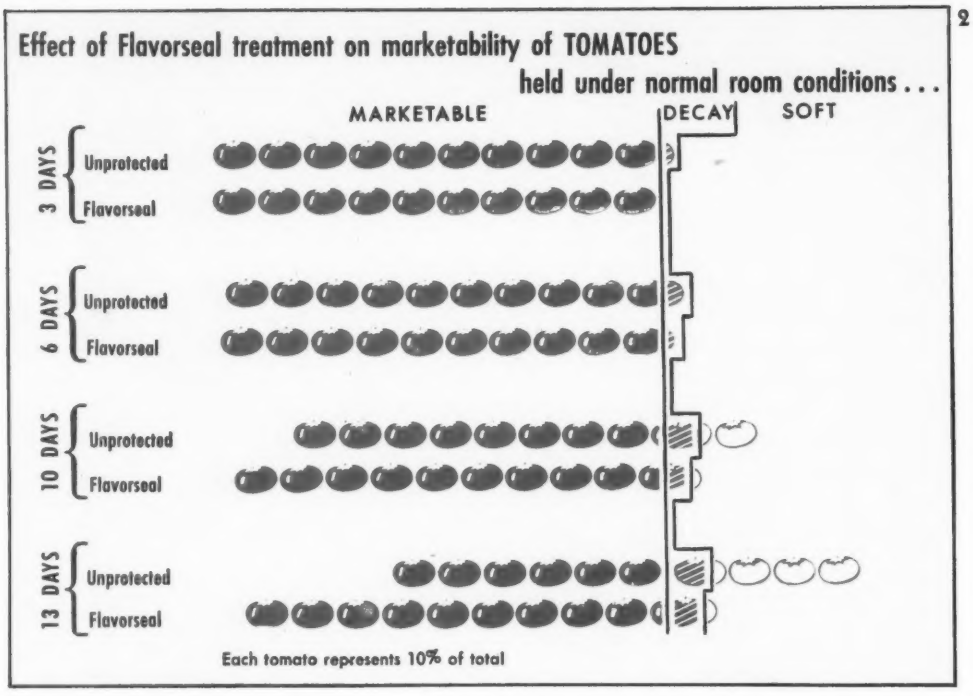
In the process of breathing, fruit inhales oxygen and exhales carbon dioxide. The latter carries along with it considerable moisture, which causes the fruit to shrink. The sugar and ascorbic acid (vitamin C) contents break down as the result of physiological deterioration due to oxidation, and the essential oils, which are volatile, evaporate through the open pores. It is for these reasons that the shipping and store life of fresh fruits has been so very limited because of obvious shrinkage, deterioration and loss of flavor.

Thus, in order to develop a scientific basis for preserving fresh produce, it was necessary first to devise a method of retarding or controlling the moisture loss and at the same time allowing the fruit to breathe.

The Food Machinery Corp. has pioneered one such method with marked success through a highly developed technique of applying mechanically a very thin wax solution to fruits and vegetables. The wax is held in solution with a petroleum hydrocarbon solvent which serves as the wax-bearing vehicle. The solvent used is highly volatile and evaporates instantly. Because this solvent is in a very pure state it leaves no residue and it is said that it does not affect the color or flavor of the produce. This solution is known commercially as "Flavor-seal."

The wax film only partially closes the pores of the fruit

*Improved ways of protecting fresh fruits and vegetables from deterioration during storage and shipment are a subject of major packaging interest. This article describes one method. Other methods in which preservation is achieved by protective papers and films will be presented in future issues of MODERN PACKAGING.*

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**2**—*After 13 days, 40% of unprotected tomatoes are unmarketable, while 7% of protected fruit have deteriorated.* **3**—*Two tomatoes held at room temperature for 30 days. Left is wrinkled untreated fruit; right, protected tomato with firmness, color and gloss retained.*

or vegetable. Thus, the exchange of gases is restricted, the rate of moisture escape is reduced, and essential oils are trapped inside the fruit.

This, in effect, is a package—in the sense that it performs some of the functions of moisture-retaining paper and film wrappings—but it is an invisible package. The wax film is so microscopically thin that it cannot even be detected by scraping with a knife. It is claimed that 3 lbs. of the wax solution will coat 80,000 oranges.

The coating is apparent only as it gives a higher gloss to the surface. Thousands of consumers have purchased fruit and vegetables so treated which they recognized only as having good color without being aware of the "package." The minute quantity of wax is perfectly digestible and harmless to humans.

The process is already being used on a large scale. It is stated by the manufacturers of the equipment that 25% of the nation's citrus fruits, 80% of the tomatoes grown in Texas and Florida, and large quantities of cantaloupes, cucumbers and bell peppers now are treated by the process.

The manufacturers estimate that total cost of treatment averages approximately 2 cents per packed box for citrus fruits, 3 cents per 30-lb. lug for tomatoes and 3 cents per crate for cantaloupes. Machines all are owned by Food Machinery Corp. and are rented or leased to packers on a cost-per-packed-box basis, this cost including supplying the proper wax solution and maintaining the machines in service.

The spraying machines are about 7 ft. tall and 8 ft. wide. Basically, they provide a means of conveying the fruit slowly under spray jets and turning it so that it acquires a uniform coating of wax of the proper thickness over its entire surface. Drying quickly as it comes from the machine, the fruit is loaded in shipping cases usually without further wrapping.

Remarkable results in retention of moisture and vitamin content are claimed for the process. During the first week after picking, unprotected oranges lose more than 4% of their moisture at normal room temperatures; for coated oranges the loss in the same period is less than $2^1/_2\%$. This difference becomes progressively greater over longer periods of storage. By the end of the second week, unprotected oranges show a loss of $7^1/_4\%$ of moisture; protected, only $4^1/_2\%$. After the

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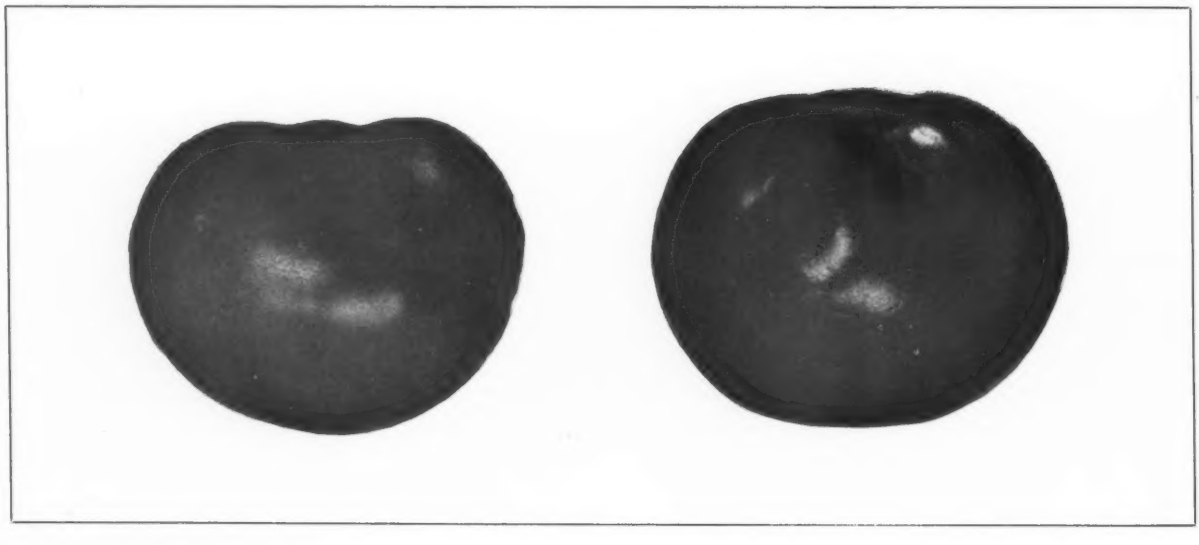

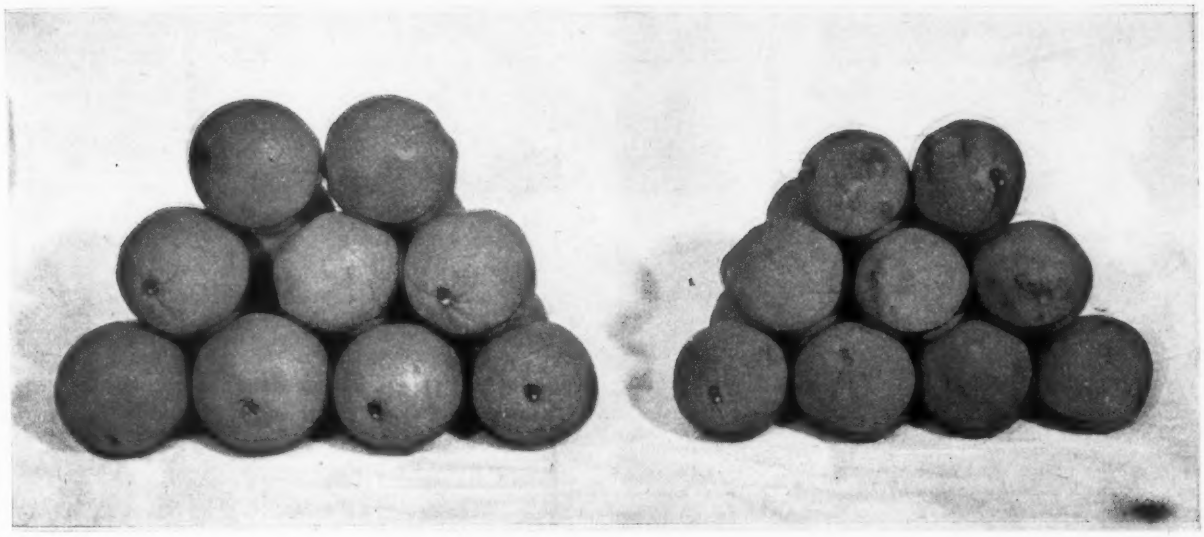

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third week, the unprotected fruit has lost $10^1/_2\%$; the protected, less than 6%.

Comparison of vitamin C loss in the juice content of oranges indicates, according to Food Machinery researchers, that in two weeks unprotected fruit loses 11% and protected fruit only 3%; after three weeks, unprotected, 13%; protected, 4%. It is claimed that as much as 59% more of the vitamin C content is conserved by the use of the process after three weeks, while protected oranges retain 75% more of their original flavor.

To show what an orange loses, scientists put it in a glass jar and seal the top, with the exception of an intake and outlet hose. Through the intake hose, air from which all moisture has been extracted is introduced into the jar. This dry air is circulated through the container and picks up the moisture and the chemical by-products that are given off by the fruit. Through the outlet hose, the air is carried into the condenser, where it becomes apparent that a great deal of juice has evaporated from the fruit.

This isn't all water. The fruit has also lost a large amount of the volatile oils that make it aromatic. Some of the sugars, too, have been united with the oxygen in the air and have been released as carbon dioxide.

This is what has happened when you see an orange that's shrunken. And the difference between a fresh orange and a dried one isn't only the difference in weight and moisture, for the old orange has also lost most of its vitamins and much of its food value.

The science of using wax for the preservation of fresh fruits is not new. It was first practiced by the ancient Chinese in the twelfth and thirteenth centuries. Citriculture flourished in China in the days of Marco Polo.

At that time the Chinese first experimented with the dipping of oranges and lemons in molten wax. Discovering that this caused the fruit to ferment, they developed a method of applying wax with brushes. As better results were obtained, they experimented with other fruits. The Chinese method of applying wax with brushes was basically similar to what is now known as slab waxing.

A modern application of this principle is a mechanical

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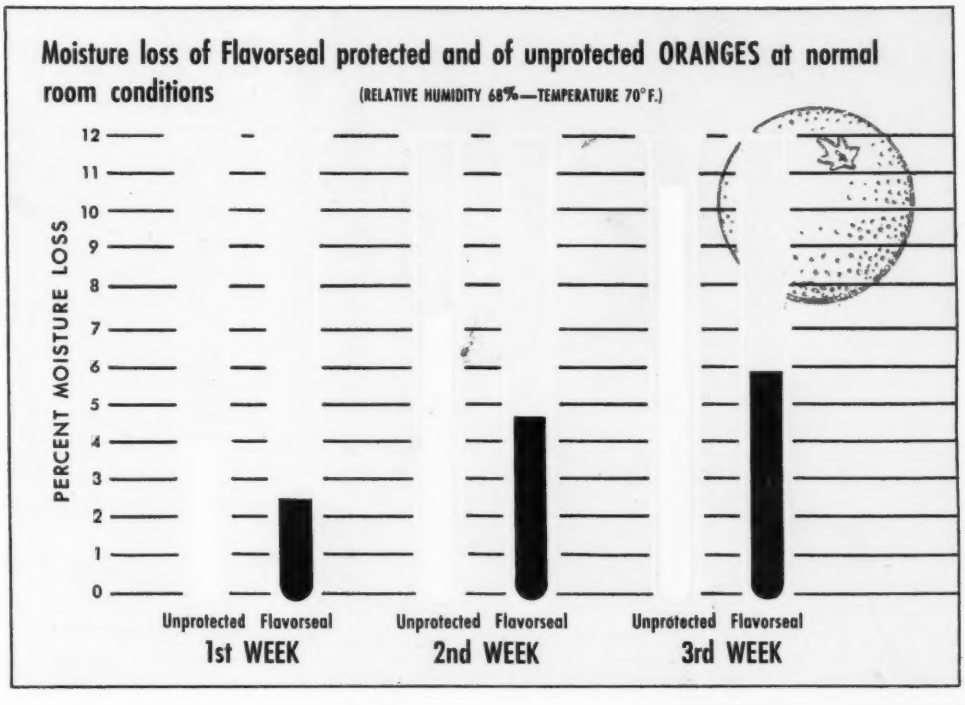
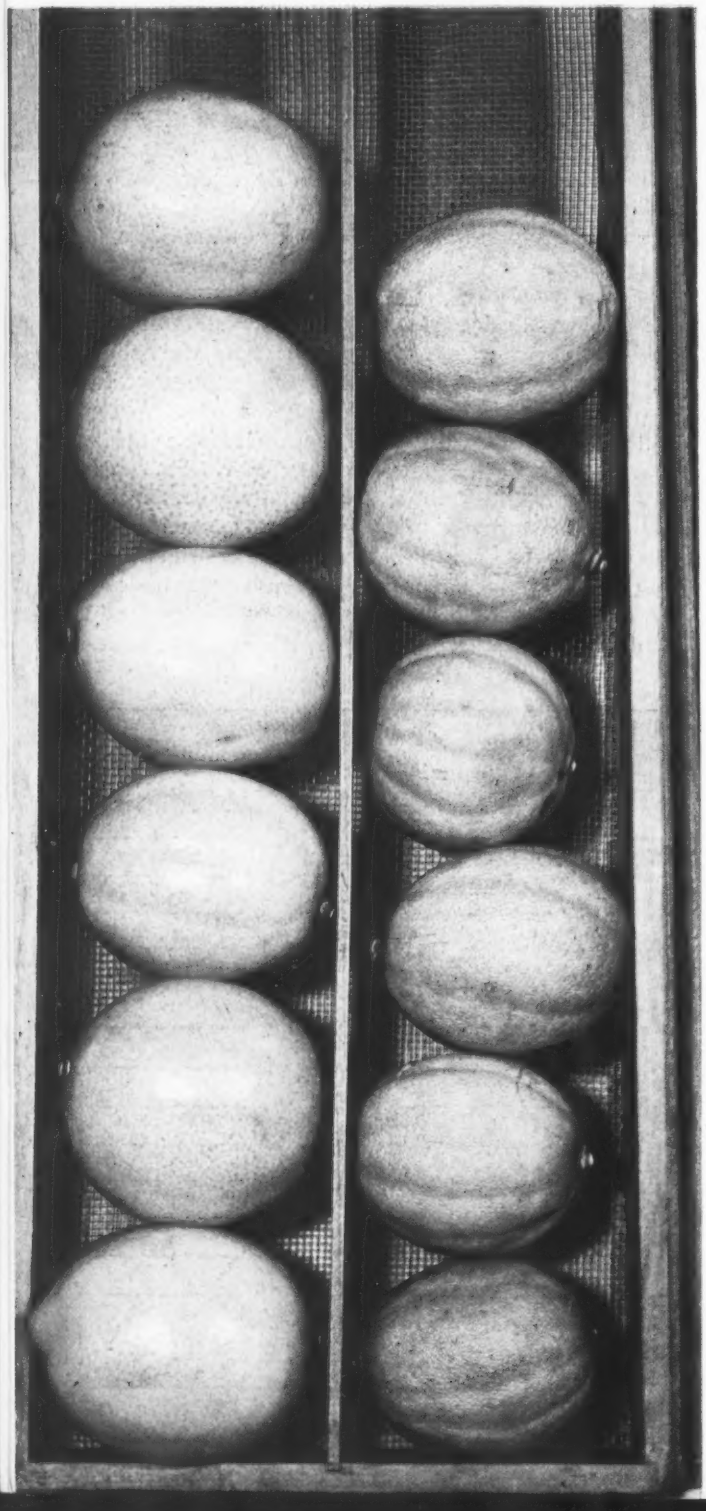



*4—Both piles of oranges are 23 days old and from the same lot; left is protected; right, unprotected.* **5**—*After three weeks, almost twice as much moisture has been lost by unprotected oranges as by the protected fruit, according to the tabulation of results shown here.*

system of waxing fruits with rotary brushes. This method, however, has certain disadvantages.

Another present-day method of preserving fruits and vegetables with wax is the so-called splatter method. Although it is adaptable to a greater variety of produce, splatter waxing has not proved entirely satisfactory in all cases. When wax is applied over the surface of fruit in this manner, the coverage tends to be more or less spotty. The pores in some areas are completely sealed, while the pores in adjacent areas are left completely open. Even though the water loss is eliminated in the wax-covered areas, it is accelerated in the open areas as more moisture finds its way through the enclosed pores.

The experimental spade work in the spray method was first carried on in the laboratories of the Food Machinery Corp. as early as 1927. However, it was not until 1938 that Chief Research Chemist Arthur Kalmar perfected the basic process through which, it is claimed, a definite predetermined degree of moisture control in produce can be attained.



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The first experiments were conducted on oranges. A wax-bearing solution was developed which, when sprayed over the surface of the fruit, would decrease uniformly the openings of all the pores. Thus an equal degree of exhalation or moisture escape through each pore could be maintained. The degree of moisture escape could be retarded or increased within certain limits.

Following the successful processing of oranges, the method has been extended to other fruits and vegetables, until at the present time eight varieties are being processed on an extensive commercial basis. Besides oranges, these varieties include lemons, grapefruit, cucumbers, tomatoes, tangerines, cantaloupes and bell peppers. Experimental control work is being carried on with seven other varieties, including asparagus, apricots, egg plant and potatoes.

Due to wide differences in surface textures of various fruits and vegetables, several types of waxes are used. Also, the amount is varied according to the absorption capacity and skin or rind texture of the particular fruit or vegetable. The contrast between the repellent, thin, smooth skin of the tomato and the thick, porous peel of oranges or lemons is an example of the wide range of requirements which must be filled.

Each of these waxes is soluble only in a special type of petroleum hydrocarbon solvent. The waxes are not soluble in water, as are the "water waxes" used in other methods.

In the case of cantaloupes, a special resin is used instead of wax. The resin is held in solution with the same type of extremely volatile hydrocarbon solvent. Due to the extremely porous surface characteristics of cantaloupes, it is necessary to control their absorption of moisture from melting ice, air and water, as well as to control their exhalation of essential moisture. This dual control acts to prevent cantaloupes from becoming soggy, and also helps to preserve their natural flavor.

With minor variations for different types of fruits and vegetables, this is the way the wax-spray method works in the shipper's plant:

Prior to actual processing, the fresh produce is thoroughly washed and dried. This is done mechanically, by means of a washer in which soft brushes cleanse the surface of the fruit as it travels first through a solution of soap and water, then under jets of clean, fresh water. The drying is accelerated by forced drafts of cool, dry, compressed air.

A conveyor approximately 4 ft. in width then carries the fruit or vegetables to the big waxing machine. As the produce passes through the waxer on rollers it is mechanically revolved in every direction. The entire surface is uniformly exposed to a fine spray of the cool, waxy solution for a period of from three to five seconds. The solution is forced or sprayed through a battery of tiny jets, which so atomize the solution that it is little more than a mist.

The liquid portion of the solution evaporates immediately, leaving a thin film of wax over the surface which blends with the natural waxes of the peel or skin.

After leaving the applicator, the fruits or vegetables travel on a conveyor past women workers who sort and grade the produce and pack it in crates preparatory to shipment.

***6**—Tray of lemons undergoing aging test. Protected lemons (left) are compared with unprotected fruit 25 days after packing. Both lots were of the same quality, size, weight and degree of maturity and picked at same time.*

Large processing plants are located in Riverside and San Jose, California; Harlingen, Texas; and Dunedin and Lakeland, Florida. In the Food Machinery Corp. laboratories which are maintained in conjunction with these plants a continuous program of intensive research and experimentation is being followed. Two general fields of produce protection are being explored. One type of laboratory and field work is devoted to new and as yet commercially undeveloped applications of the spray method.

Tests are run and maintained on every type of perishable produce obtainable. Daily checks are made on the protected and unprotected specimens. Each week many experimental lots of protected fruits and vegetables are shipped to distant localities.

As a specific example of laboratory progress, a process has been developed for treating apricots; also, small commercial units have been placed in operation for processing asparagus tips.

Another type of field and laboratory research is control work, devoted to tests of the specific varieties of protected and unprotected produce being processed on a commercial scale.

Horticultural research has revealed that the chemical and physical makeup of fruits and vegetables may differ in various areas of the country. Florida oranges, for example, may contain a higher or lower content of vitamin C than California oranges. Very often a tremendous difference in quality between fruit from different groves in the same locality has been noted. It is a well-known fact that oranges grown on the south side of the tree often differ from those grown on the north side, since the south side of the tree is most exposed to the sun's rays.

Due to these variations, therefore, tests are run at regular intervals on commercial lots of fruits and vegetables taken from packing houses in various parts of the country. The figures which are given to show the performance of the coating are an average of many tests; performance with individual lots of produce may be much better or worse.

Following the laboratory work and treatment or processing, the samples are subjected to an exposure test. Samples of protected and unprotected produce taken from the same lots are placed in specially designed accelerated-exposure cabinets. In these cabinets, the samples quickly undergo the equivalent of exposure to normal room temperatures for long periods of time.

Samples from each locality are weighed. Comparative percentage of water loss and shrinkage in protected and unprotected produce are recorded. Various forms of deterioration such as decay, cellular breakdown and the dissipation of vitamins, minerals and oils are noted.

Shrinkage control is the term used to express the ratio of weight loss of protected as against unprotected produce. Thus, when exposure cabinet tests, covering a period of three weeks, show the loss of weight of protected oranges to be 6% and the loss of weight of unprotected oranges to be 10½%, the shrinkage control is found to be over 40%.

Tests with lemons revealed the average loss of weight of protected fruit three weeks after picking to be approximately 11%. The average loss of weight of unprotected fruit during the same period was slightly less than 28%, and, therefore

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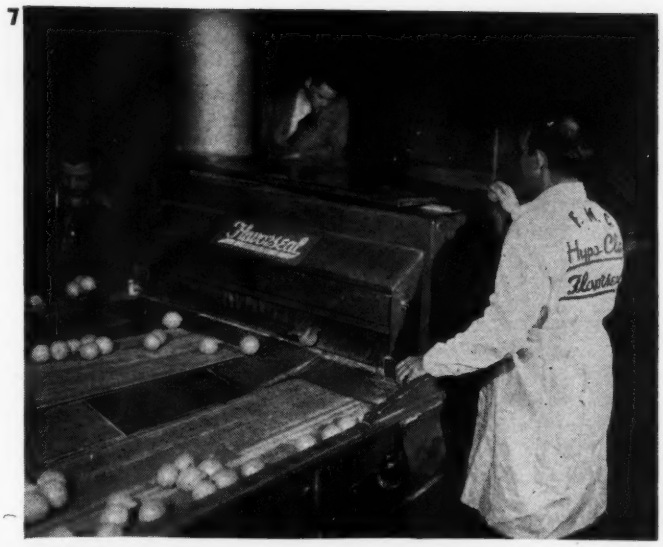

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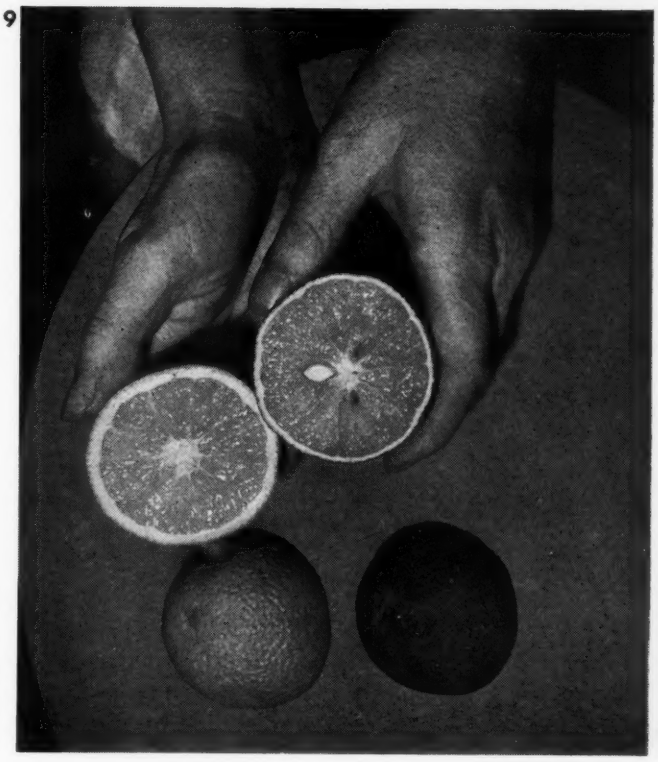

***7**—Here lemons are emerging from wax-spray machine.* **8**—*Photo taken in the coating chamber shows oranges revolving as they pass through mist of waxy solution.* **9**—*Treated (left) and untreated oranges 48 days after they were picked.*

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the shrinkage control, in this case,amounted to about 60%.

Graphs reveal that in the case of protected fruit the rate of moisture loss remains constant through a three-week period, while the rate of loss in unprotected fruit shows an abrupt increase at the end of the second week.

With lemons, the unprotected fruit in three weeks loses approximately 15% of its vitamin C content, while protected lemons show a loss of only 7%.

Among the citrus fruits, lemons present the most difficult shrinkage-control problem. This is due to the exceptionally porous character of the rind and the consequent high rate of water loss. However, extreme tests have shown protected lemons to be in salable condition four months after picking.

Each new fruit or vegetable to which the process is to be applied poses a new problem. It was found, for instance, that tomatoes breathe not through their skin but through the stem scar. After experiments it was found that there would be no difficulty in handling the tomato in commercial quantities because of the fact that the stem scar remains moist as the tomato comes out of the washer and enters the applicator, and hence the wax will not adhere at this point and will not cause sealing of the fruit's natural "windpipe."

Tests show that 20 days after picking, an average of 24% of unprotected tomatoes are salable, while of those that have been treated, 82% are salable.

To illustrate the effectiveness of their process on tomatoes, the Food Machinery people like to tell the story of the carload of tomatoes that got lost. The car left Laurelles, Tex., billed for Los Angeles, but due to an error was headed east instead and after two days turned up in Kansas City. The shippers tried to catch the car there, but too late—the railroad had sent it farther east, to St. Louis.

It was suggested to the shipper that he take the car there and handle it in some local close-by market, but before he could get hold of the car, the railroad, realizing their mistake, had turned it around and started it for Los Angeles. Sixteen days after the car left Texas, it arrived in Los Angeles. The consignee expected to find a sorry mess of juice when he opened the car, and was greatly surprised to find the protected fruit so well preserved that he was easily able to dispose of the shipment at a profit.

Installations of equipment for this process have, of course, been limited by the war, but where it has been used it has shown up to particular advantage especially under wartime conditions.

The shortages of labor and paper have forced many shippers to dispense with individual wrappers for fruits and vegetables and send them out "naked," to encounter wartime rough handling and delays in transit. Losses from shrinkage and spoilage have thus been sharply higher for unprotected as against wax-protected produce.

The Flavorseal people are anxious to point out, however, that their unique package won't make bad fruit good or good fruit any better; it adds nothing to what nature has already given—but it does appear to be remarkably successful in sealing in and holding the fresh-picked goodness, which is the test of any package.

**10**—*Packing bell peppers which have been treated in machine in background. Color and crispness are preserved.*
**11**—*Chemist Arthur Kalmar and assistant look over tray of 75-day old lemons in Food Machinery Corp. laboratory, Riverdale, Calif. Comparative tests are run constantly.*
**12**—*Halves of two lemons 75 days after picking from same tree. Protected (top) and unprotected (below).*

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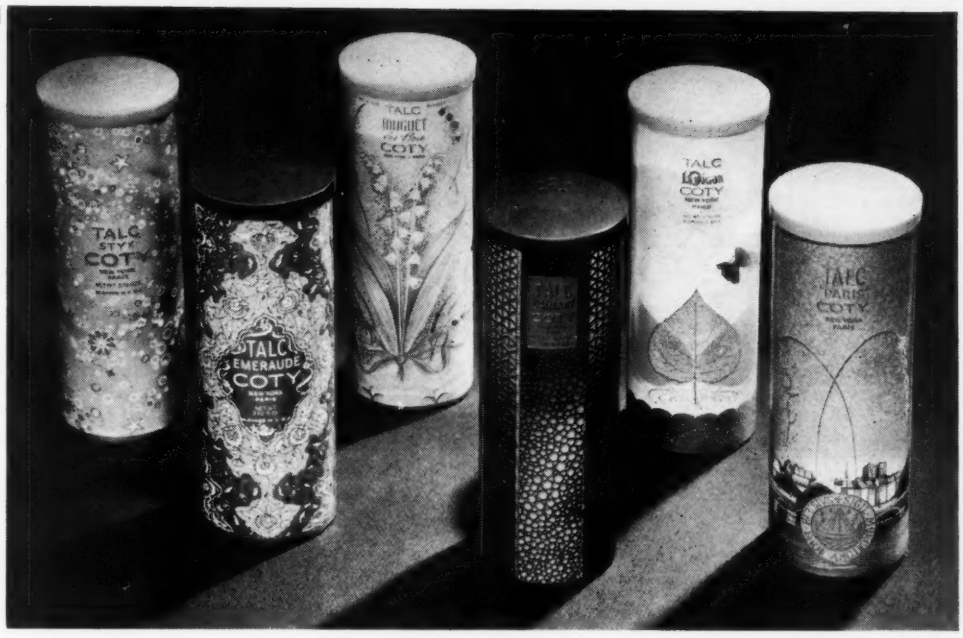



*1—Coty's new talc cans, identical in size, shape and structure, show pleasing variety in design and color. 2—Assembly of all-paper container (left) shows triple tube construction with shoulder for felt-lined disc and beading for plastic top. At right, assembly of parts for container with metal ends.*

# Talc cans . . . Coty captures six distinctive fragrances

Leaders in the cosmetic field hold that the nature of their products makes high quality packaging imperative, just as a beautiful jewel calls for a beautiful setting.

A fragrance, they say, may be thought of as the "mother" of a line of toiletries, setting the stage for a family or group of products. In their promotional work, it is the fragrance which is featured, and the related products such as talc, toilet water, dusting powder, face powder, etc., are—as the lawyers might say—appurtenances thereto.

When it comes to packaging, this principle is important, because it is the practice of the industry to build its packaging around these groups of products based on fragrances.

In the line of any cosmetic house there may be as many as half a dozen different fragrances, each one of which is the basis for a complete group of related products. In each group the packages may have a theme or motif which—in the words of a designer noted for cosmetic packaging—is an endeavor to catch the spirit of the particular fragrance and translate it into the visible forms possible through the artistic use of packaging materials.

This principle, obviously, was applied in developing the even half-dozen new talc containers for the Coty line. The containers themselves are identical in size, shape and structure. In design and appearance they demonstrate perfectly that the same size and shape can be treated in such a manner as to show a remarkable variety of line and color. Each of the six entirely different designs is in keeping with its own fragrance family.

Structurally, too, these talc containers show intelligent planning. They cannot be regarded as a wartime substitution; they are intended for permanent adoption, although very soon their structure will be somewhat different from the way in which they were first made. This change will have no effect on their appearance, as it merely substitutes metal top and bottom rings for the paper parts which lack of metal made necessary during the early development stages.

Both styles have plastic tops, in soft pastel colors to harmonize with the various designs. These are sifter tops which open and close smoothly and easily over a felt disc.

The first construction of the body of the can, all paper, was really a three-tube structure. The inner tube formed a shoulder on which rested the felt-lined disc which forms the inner closure. The middle tube had a beading on which the plastic top snapped. The outer tube merely served to reduce the apparent extension of the plastic top over the edge.

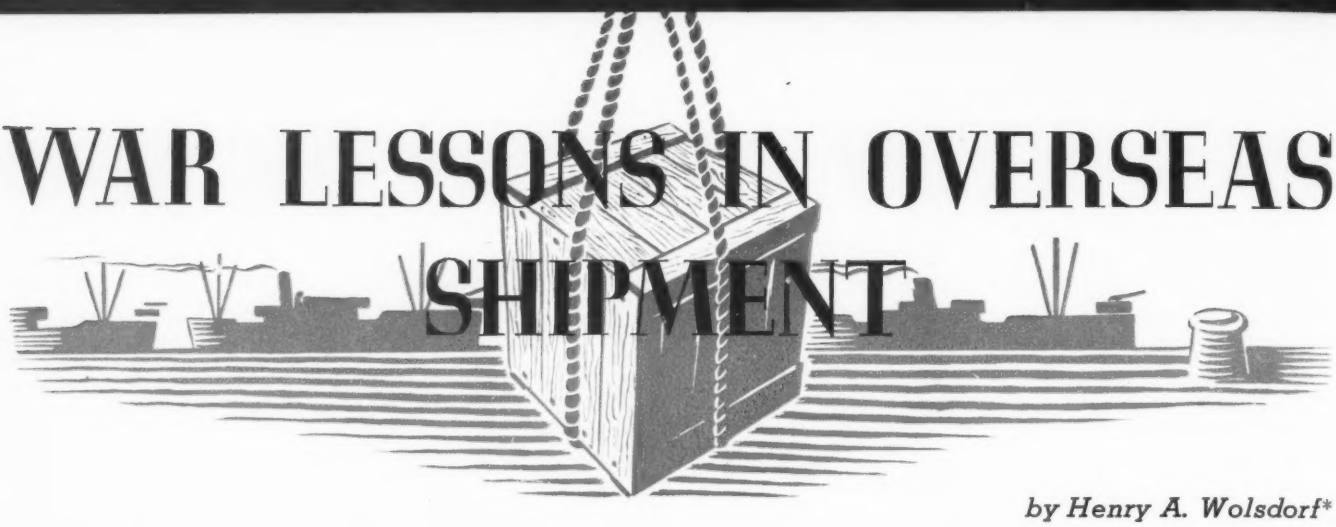
The metal-end form, which is now going into production, is a single tube paper can. The top has a metal ring with a shoulder which holds the felt-lined disc. This metal ring a'so has a beading onto which the plastic top is snapped.

Unlike some containers which the war has brought forth, these cans are filled from the top on a semi-automatic filling line. The cans are delivered to the user already labeled, with the bottoms in. The automatic fillers blow the powder in, the felt discs are placed in position by hand, the plastic tops are laid on, a belt conveyor carries the cans through a mechanism which snaps the tops on, and the filled cans are ready to be packed in the bulk container.

*Credit: Labels designed and created by Coty; construction of container (patent applied for) L. Harold Brodrick; manufacturer, W. C. Ritchie and Company, Chicago.*

2

# WAR LESSONS IN OVERSEAS SHIPMENT



*by Henry A. Wolsdorf**

1

2

The present war has been instrumental in requiring the packing and packaging industries to do incredible things. New goals have been reached in the production of packaging materials and many new materials and practices have made their appearance in the packaging field. And, although response to the call for new achievements was not always spontaneous, industry, in general, deserves much praise for doing well the job it was called upon to do.

Many manufacturers and contractors involved in packaging and packing for overseas shipment of military equipment and war supplies have made valuable contributions to the fund of knowledge covering this subject. They must have a feeling of pride as they observe their packages going forth in the war effort. And, in turn, they undoubtedly wonder what the packages look like when they arrive at final destination. Have they satisfactorily withstood the rigors of the journey? Have they given the required protection so as to deliver the contents in usable condition?

The answers to these questions are important and especially so to the packing and packaging industries. Publication of the answers would be of great value to these industries, but complete information covering this wide field is not at hand. Many reports are received from the field, however, and such information that must not be withheld, for security reasons, is made available to interested parties.

Progress in the development of packaging and packing for overseas shipment during the war period may be divided into the following three phases:

1. The original effort to get shipments of matériel and supplies overseas as rapidly as possible. During this phase many shipments went forward packed for domestic service only. Damage to such shipments was, of course, expected. When, however, reports began to arrive indicating damage to shipments packed for export, it was considered highly essential to establish a sufficiently high level of protection so that con-

* Chairman, Container Coordinating Committee, W.P.B.

1—*Too much slack in kegs may cause damage as indicated.*
2—*The loose ends of these boxes have moved inward because too much slack was allowed lengthwise of the boxes.*

***Experience has been a stern teacher in the unprecedented requirements of packing for shipment in this global war, and these lessons unquestionably will set the pattern of protective packing for many years. They will be particularly helpful for the increased export business which undoubtedly will follow the war. This article, by one who has been directly concerned with all phases of the problem, is the best summary to date of war lessons we have learned.***

tents would be in usable conditon on arrival at final destination.

2. A transition period, in which intensive research and development was promoted, and test shipments were made overseas. This work resulted in the establishment of the level of protection to contents required by Army-Navy General Specification for Packaging and Packing for Overseas Shipment, U. S. Army Specifications No. 100-14A, U. S. Navy Specification 39P16a.
3. A proofing period during which reports received from overseas formed the basis for confirmation of the adequacy of the established level of protection, with some modifications required in some instances.

As reports continue to arrive from overseas confirming again and again the adequacy of most of the specifications on packaging and packing for overseas shipment, it should now be opportune to survey the progress that has been made since the beginning of the war and to mention a few items that have been added to the history of successful export packaging and packing. The treatment of the subject can be of a general nature only but sufficient detail will be included to illustrate some of the points in question.

## Maximum Gross Weight

Consideration of maximum gross weight of a package is very important. If the package is to be handled by one man the weight should be limited to 70 lbs.; if by two men, 200 lbs. If transportation at some time is to be by pack animal, the limit should be 70 lbs. On large crates a gross weight of approximately 10,000 lbs. must be accepted as the maximum when the crate is to be handled by means of grab hooks. Beyond this weight crates should be handled by means of slings. The top limit on gross weight of crates usually is the maximum capacity of the lifting gear on the ordinary freighter. Weights above this limit require the use of special handling gear and this may cause shipping delays while such equipment is being made available.

## Marking and Identification

One troublesome feature on export shipments has been the difficulty in identifying poorly marked shipments. Lengthy delays, and, in some instances, complete loss of shipments have occurred because markings on the outside of containers were illegible or became eradicated or faded out due to the action of weather on unsatisfactory marking materials. Nor has faulty marking been confined to exterior containers alone. Identification of contents has frequently been impossible because markings on tags or labels attached to wrappers or interior containers have become illegible, due to contact with oil or grease or to general deterioration of the tag or label.

## Protection against Corrosion

Various satisfactory materials have been prepared, which, when applied to a metallic surface, will protect that surface against corrosion. The application of these materials follows through cleaning and drying of the surfaces to be preserved. The key point of these operations is the continuous care that must be exercised in getting the surfaces clean and dry, and in keeping them clean and dry until the corrosion preventive is

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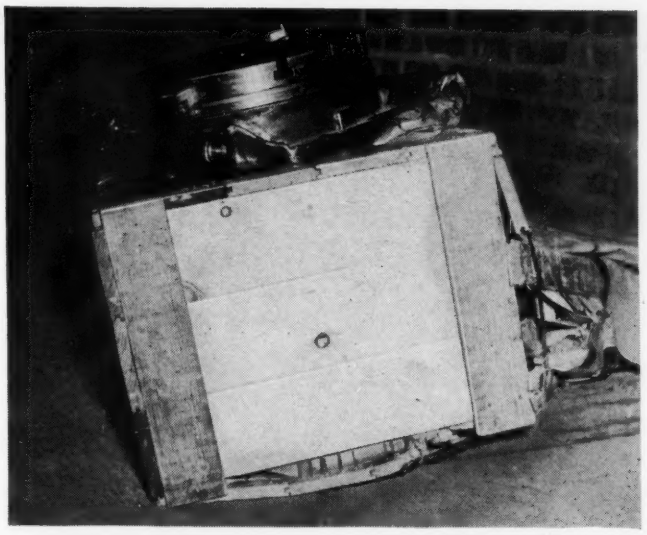

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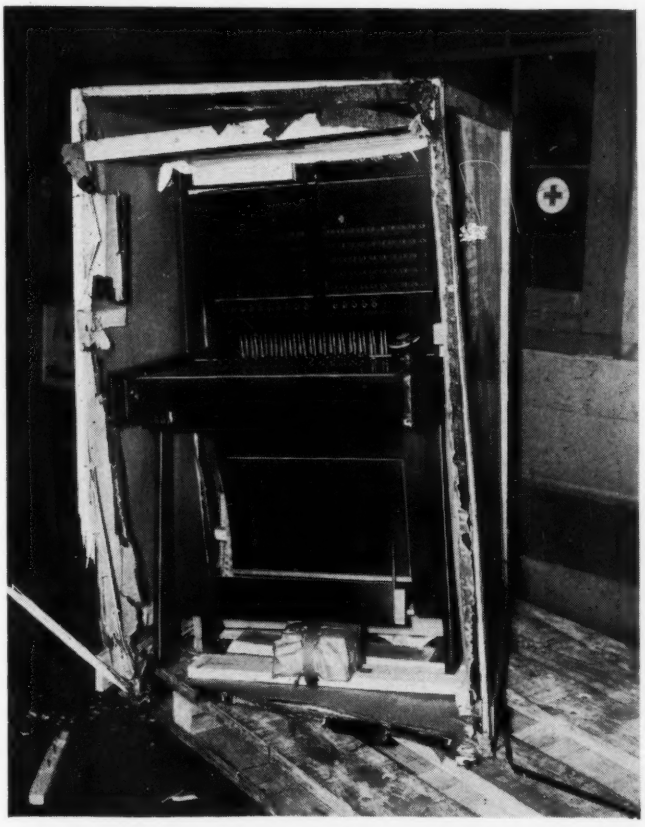

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***3**—The circular head was not adequately secured in the box. **4**—Damage to switchboard caused by inadequate bracing in box. **5**—Inadequate bracing works loose.*

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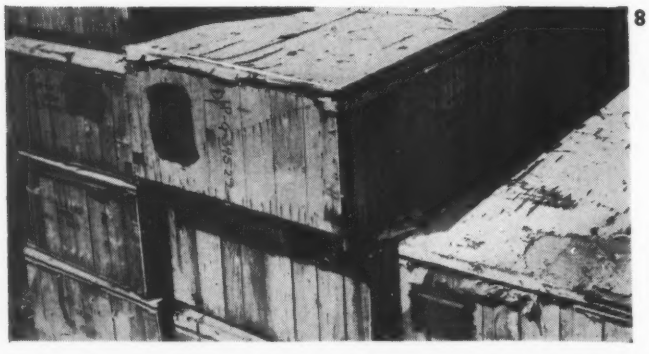

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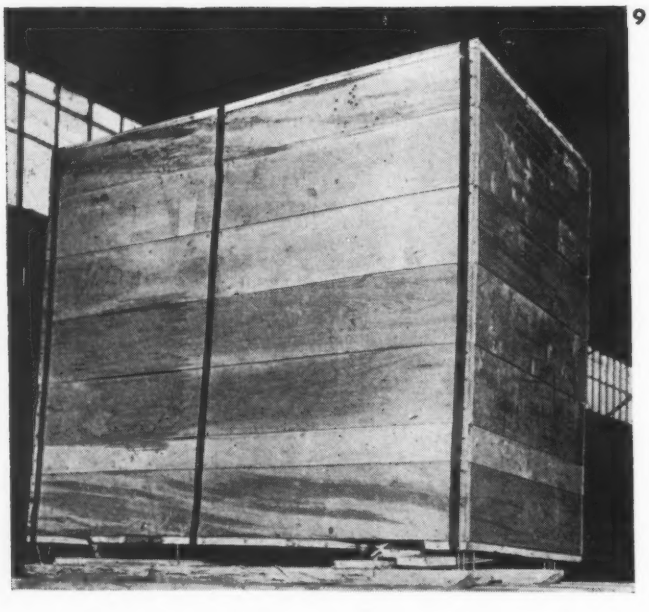

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applied. The most effective corrosion preventive and the best possible packaging may not prevent corrosion if this requirement is not observed.

## Interior Packaging

It is in this field that the most important scientific developments have occurred. Adequate treatment of this subject is impossible here but previous issues of MODERN PACKAGING have carried detailed discussions on these kinds of packages.

Wrapping materials of many kinds are available for Method I and IA packaging. Most of the materials have performed satisfactorily. An outstanding weakness of some materials has been inadequate strength which resulted in physical failure of the materials during wrapping or while in transit. Corrective measures have been taken to overcome this weakness. Reports indicate that Method IA packages are performing excellently and that the results of Method I packages are nearly as good.

Method II packaging should be considered a highly specialized form of packaging. Little more need be said here except that some shipments have been highly successful and others have failed. One frequent cause of failure is that the barrier, due to faulty design or application, at some point in transit is subjected to excessive strains by distortion of the shipping container. Consequently, physical failure frequently occurs in such cases. This indicates that Method II packaging should be an *engineered* job if successful performance is expected.

## Case Liners

The use of case liners for waterproofing the contents of shipping containers has received much attention. At first it appeared to be desirable to line the faces of boxes with waterproof paper, being careful not to seal the joints. The thought was that any water that might enter the box would easily flow out again. Shipping tests, however, indicated that the water does not flow out very readily. The procedure was then changed and most case liners are now sealed. By sealing the case liner practically no water ever enters and such a small amount as may enter on occasions does no harm if contents are adequately protected against corrosion.

Three outstanding faults have been experienced with case liners. The first is a breakdown of the water barrier at corners and edges of the case liner. The second is rupture of the material due to distortion of the shipping container. The third is failure at the closure due to use of inadequate adhesive or faulty method of closing. Careful research can and is correcting these faults. As pointed out in Method II packaging, more careful engineering applied to the design of case liners will result in adequate performance.

## Packing the Shipping Container

The importance of satisfactorily packing the contents into a shipping container should bear equal weight with the importance of providing an adequate shipping container. Too frequently a large amount of slack, in the case of bulk articles,

***6**—Slatted crates require diagonals to resist deflection.* ***7**—Boards on top of crate, warped and curled, form openings that permit entrance of water.* ***8**—Tops of crates in good condition give protection to contents.* ***9**—Connections between base and other sections of a crate must be very strong to prevent failures of this kind.*

or large voids that could be eliminated, are permitted in packing. Kegs for nails, bolts and track materials usually have too much slack, and, in overseas shipments, are subject to damage as shown in Fig. 1. An example of voids that could be eliminated is shown in Fig. 2. The box is several inches too long, and the ends, which are loose in the box, have been pushed in to indicate excessive void space.

Articles that must be securely fastened in containers by bolting, blocking or bracing should be given engineering consideration to be certain that an adequate packing job is being done. Fig. 3 shows an adequate container that has failed and dumped its contents because the latter was not securely fastened in place in the container. Fig. 4 shows a switchboard that was ruined because of inadequate bracing in the container. It is very probable that the container was inadequate in this instance. Fig. 5 shows collapse of interior bracing that caused failure of the container with probable damage to the contents.

## Crates

Open crates (slatted construction) lend themselves readily to many kinds of packing and are very simple to construct. Nevertheless, too large a percentage of this kind of container fails in overseas service. Two important principles, the use of diagonals and three-way corner construction, are often ignored and are the source of most of the trouble. Fig. 6 illustrates what the end results may be.

On large sheathed crates (fully enclosed), one of the most interesting developments was the waterproofing of the top of the crate. A comparison of performance is best illustrated in Figs. 7 and 8. In Fig. 7 the top was waterproofed by lining the inner surface with waterproof paper. Weathering of the exterior surface has caused the sheathing to warp and curl and excessive nail pulling has occurred. Weatherproofing has, of course, ceased to exist. Crates in storage in the same depot, but with satisfactory waterproofing, are shown in Fig. 8. Torn waterproof paper on the exterior does not interfere with the effectiveness of the mastic adhesive that was applied to the top of the crate. The paper was originally laid on the adhesive while wet, so as to permit stacking of the crates without sticking. In this example, not only is the waterproofness of the top maintained, but the top itself has held up well.

A requirement applying to fully sheathed crates only is the necessity for ventilation. When the height of a crate exceeds 3 ft., ventilation is an important consideration. It has been found that, without ventilation, difference in temperature at the top and bottom of a crate may be 6 deg. to 10 deg. F. This condition promotes corrosion, and should be avoided. The corrosion is very serious since it results in deep pitting and not merely surface corrosion. Ventilating holes, when provided, should be placed in the ends of the crate near the top. If the crate has considerable length, say, 15 ft., or more, ventilating holes should also be provided in the sides of the crate.

A few important structural features of sheathed crates are worthy of comment at this point. Usually, the contents of the crate are attached to or mounted (*Continued on page 168*)

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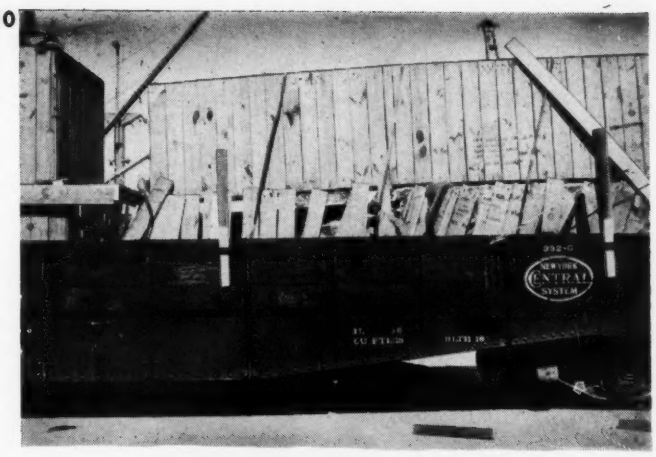

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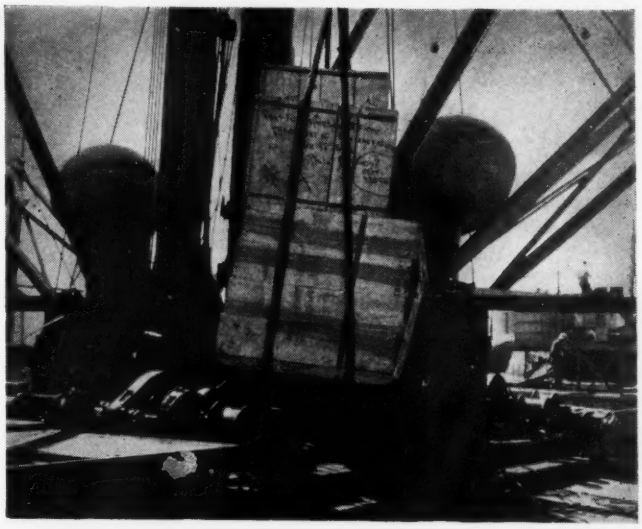

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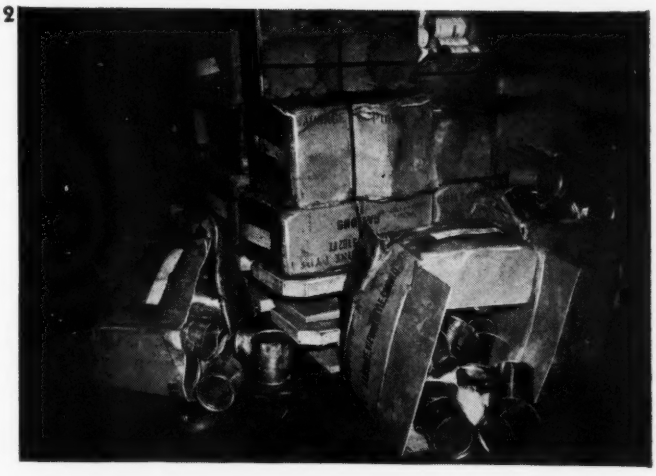

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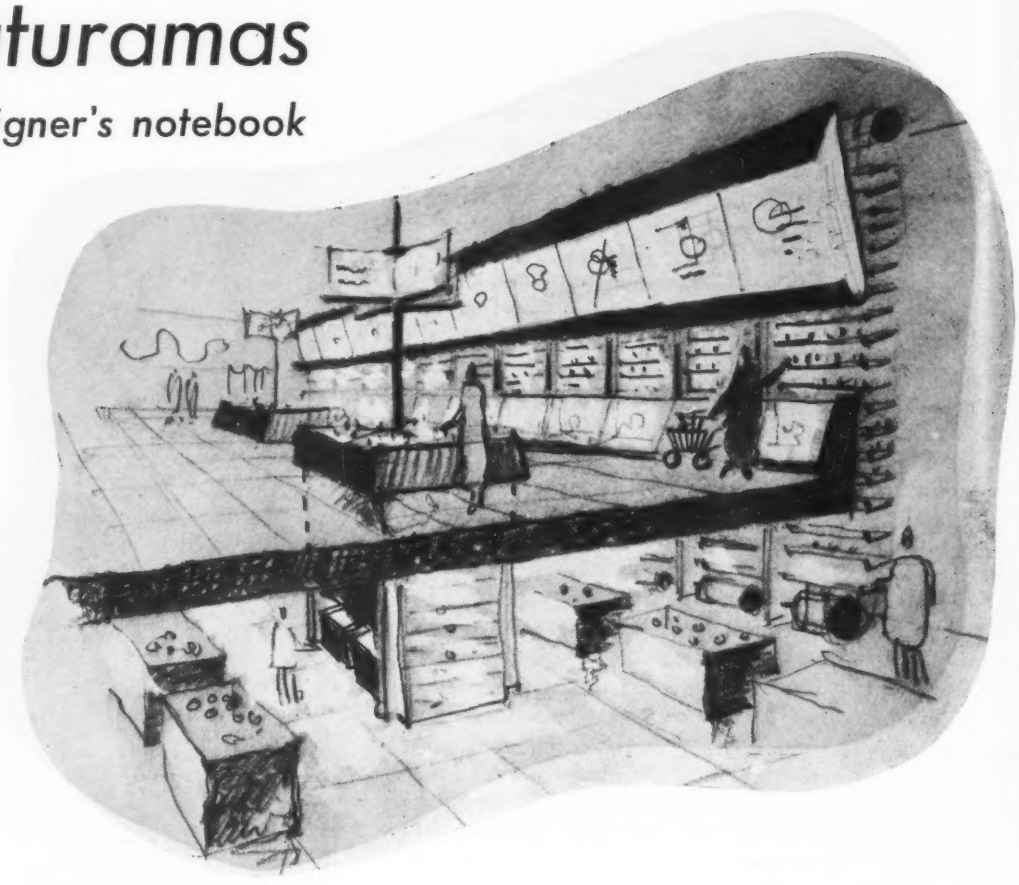
**10**—*Crates without diagonals do not resist the deflections ordinarily encountered in transit.* **11**—*Unusual hazards are frequently encountered in export shipping.* **12**—*Fibre boxes must have wet strength in order to serve satisfactorily in export service.* **13**—*Paper sacks without wet strength do not perform well in export service.*

# Retail futuramas

## . . . from a designer's notebook

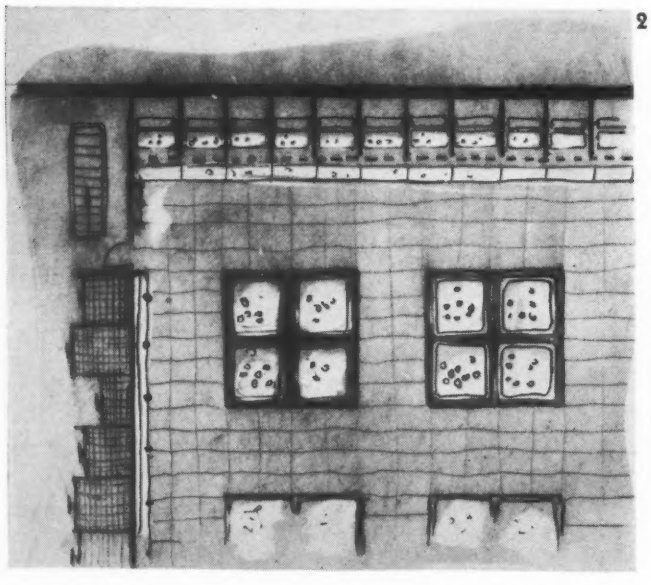


*1—Automat principles for the future food store. Self-service rotary conveyors along wall may be loaded in basement. Island bin units drop to lower level for loading.*
*2—Floor plan shows frozen food unit, left; rotary conveyor, top; and island bins, center.*

The average store floor is about 12 to 15 feet high. Only a few of those feet are within easy reach of salespeople and customers. Some footage below the easy-reach area is used for storage; some above is also used for storage, reached by poles and hooks. But a great deal of it is valuable store space going to waste.

Donald Deskey, in some suggestions on store planning, tells how vertical cubic footage may be used to save space, time and labor in the self-selection stores of the future.

The entire store of the future will become a display window for your package, says Mr. Deskey, an industrial designer whose work has covered everything from the packaging of nail polish to creating the interior of Radio City Music Hall. In such a setting shopping becomes as much fun as sight-seeing at the World's Fair. You can match your cosmetics by turning a color wheel. You can press a button and receive your favorite frozen food delivered to you from a low temperature unit by automatic chute. You can match a tie with a shirt by simply pressing a button. And in the corner drug store, you can buy things in a jiffy by putting nickels, dimes and quarters into a slot machine.



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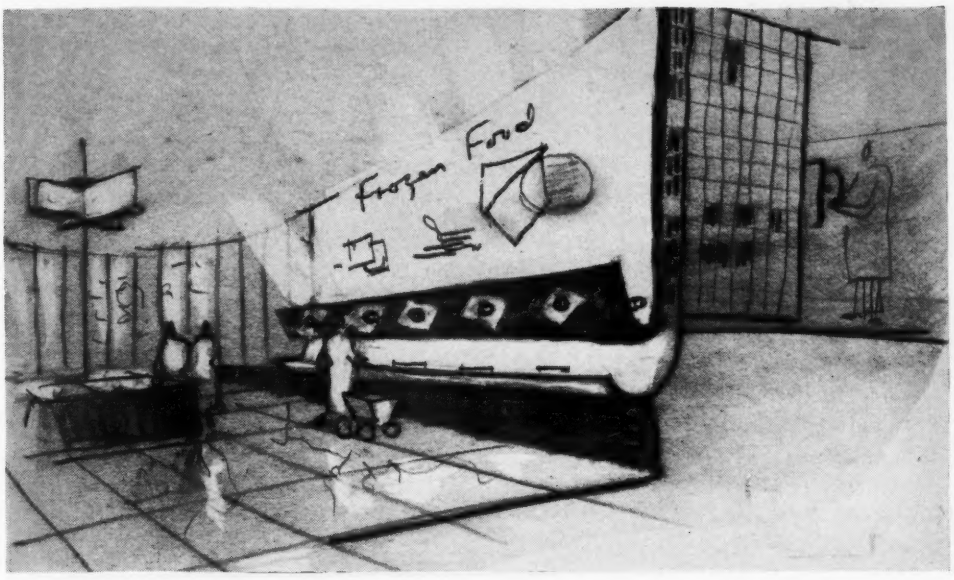
In these new merchandising settings, packaging will have an ever increasing role. The more products that are packaged, the easier they will be to handle. Also packaging for these future stores must be designed with an eye to size, shape and weight to be easily handled in the modern plants the selling outlets will be. How the color used on your packages will stand out in the lighting arrangements is also important.

The rough sketches on these pages are presented to give an idea of the type of plans now in work for some of Mr. Deskey's postwar clients. They include suggestions for a food store, a drug store and a tobacco store. The tobacco store is one that has reached blueprint stage for D. A. Schulte, Inc. The suggestions for the food and drug stores are similar to plans now in progress for Mr. Deskey's clients, but whose names cannot be revealed at this time. Collaborating with Mr. Deskey on these projects are associate architects Charles H. Warner, Jr., Clifford B. Curtis and Ralph G. Gulley.

The chief aim is to make use of vertical space in a way that will make shopping easier and save time and labor for the storekeeper. In the food store are suggestions for three principal units (Figs. 1 to 3). First of these is a wall unit for packaged goods, cartons of cereals, breakfast foods, soap flakes, etc.—items which now have to be stocked on the shelves by hand and which must be brought into the store through the aisles, thus congesting store traffic.

Mr. Deskey suggests a series of rotary-conveyor units that can be placed along the walls. Each unit is equipped with shelves which, when emptied, automatically rotate to




3—*Self-service frozen food unit. Shopper pushes button and package is delivered via a chute from storage bin loaded at rear.*

the next "full" position. An operator in the basement reloads the rotating "empties" from stock which is stored in bulk at the basement level. The conveyors are arranged in sections, so that there may be a section for each brand, or different brands of the same product, depending upon the store's requirements. The open part of the conveyor shelves is within easy reach of the customer, who may make her selections the same way she does now.

In the food store illustrations you will also notice island fixtures (Figs. 1 and 2). These are planned for selling fresh vegetables, fruits or packaged specials often sold in jumble bins. These particular islands contain four bins each. When the weight of these bins has been reduced by sales of the contents to a point where they look empty, the bins drop to the basement. There, from conveniently arranged stock, the bins are refilled and hoisted back to the selling floor. Brand display cards and prices may be placed in racks arranged for this purpose in the center of each of the four-bin islands. These racks have a place for each of the four different products in the bins. This unit is designed primarily for convenience in stocking and for keeping the aisles free from loading devices, crates and boxes to improve store traffic.

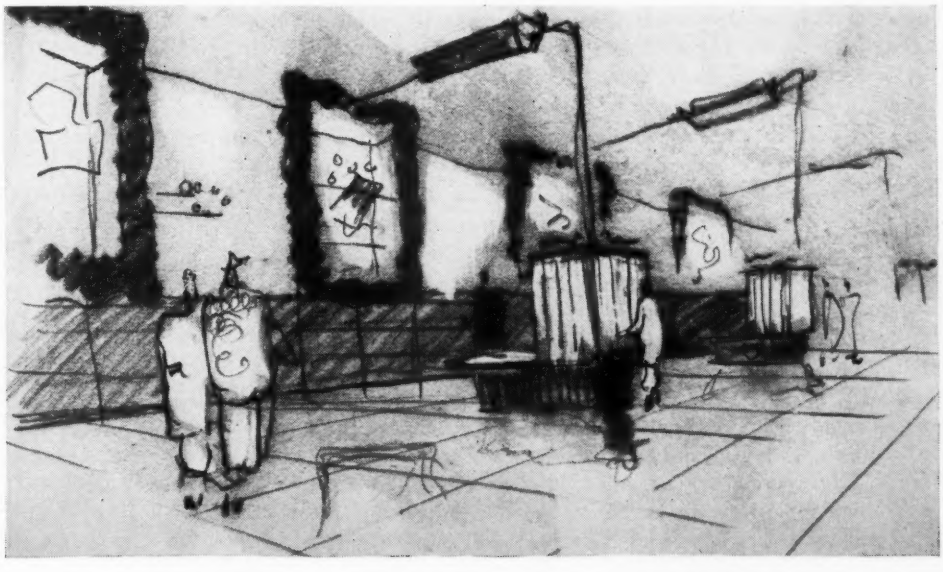
In another part of the store is a suggested unit for self-selection of frozen foods and packaged meats—items which are expected to have wide demand after the war (Fig. 3). This entire unit is planned as an improvement on the present type of frozen food cabinet into which the storekeeper must reach down to get the particular item the shopper wants.

Mr. Deskey's plan for selling frozen foods calls for a large refrigeration unit which the shopper walks past and pushes a button at the station where the particular food she wants to buy is located. The push button releases a package which is dispensed from the unit via a chute, regulated by air-pressure control. The shopper may see the packages behind a glass panel in the unit. She also is given an impulse suggestion to buy by reproductions of the packages in transparent glass panels above the chutes. These glass panels are lighted from the rear. Reflected light also spotlights the stations where she makes her selection.

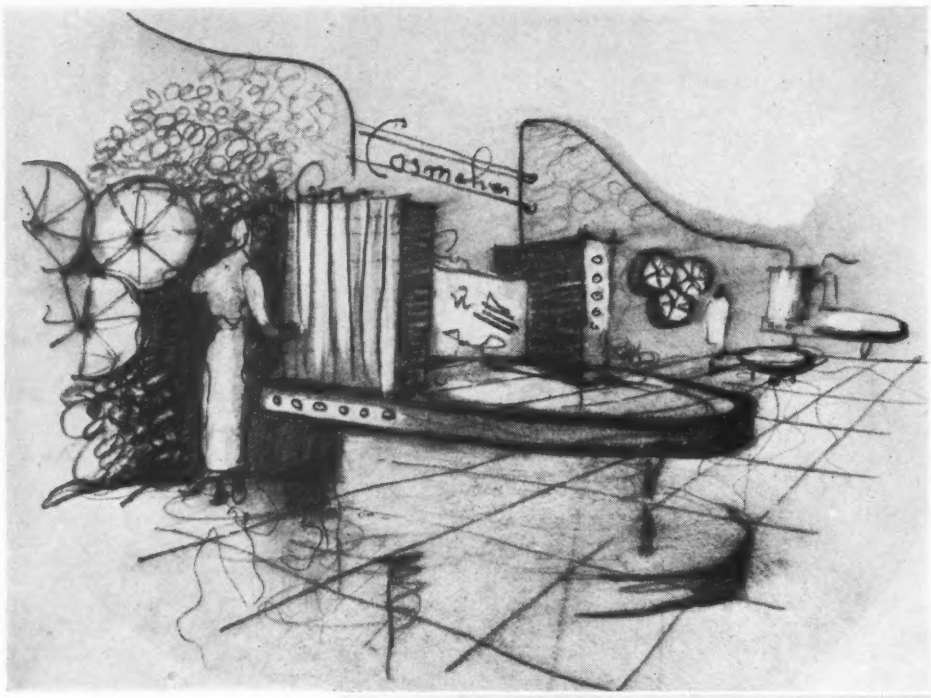
This unit is stocked from the back and can be kept full with a minimum of labor by one operator, who loads the trays that fit into the fixture. The trays may then be moved mechanically into correct positions within the chutes for proper dispensing.

Such a unit can also be made in sections so that some sections may be maintained at temperatures low enough to hold frozen foods, while others will be only low enough for fresh meats, butter, packaged cheeses, etc.

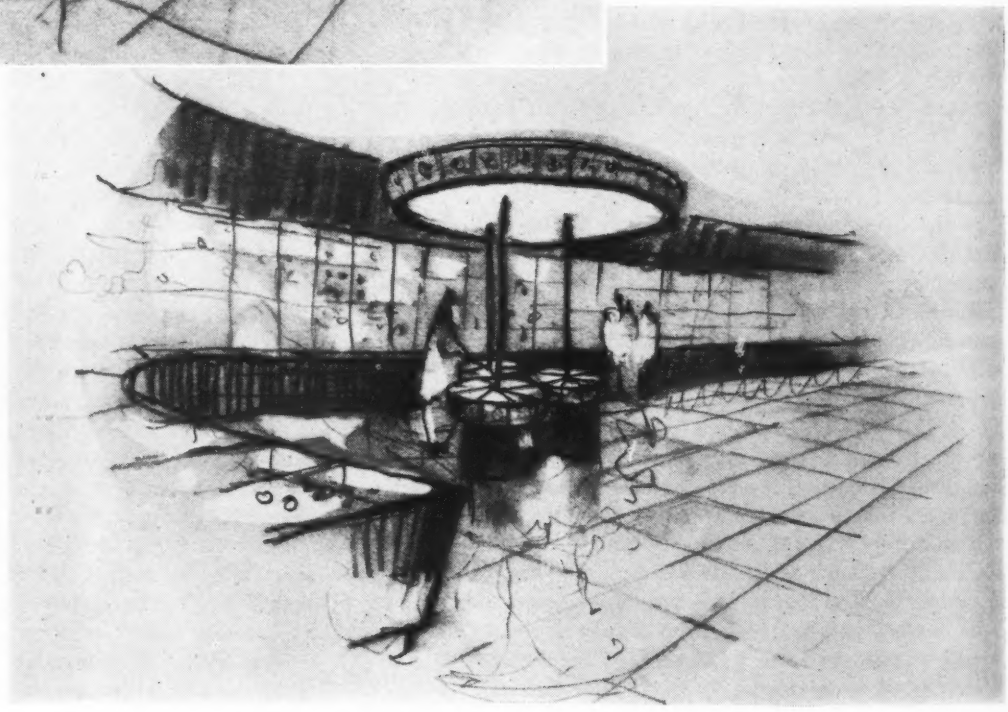
More elaborate plans might incorporate the coin-slot principle now used in automat restaurants, although this is not a



4—*Slot machines (center) for drug stores will dispense aspirin, dentifrices, toothbrushes, etc. Lighted displays along wall.*



**5**—*Color wheels on walls where customer may match cosmetic colors. Stock is kept in center case, where attendant sells items by numbers selected on wheels*



**6**—*Same color wheels in horizontal island arrangement. Stock is kept in fixtures along the walls.*

necessary requirement because, after selection, the shopper may pay a cashier, the same as she does now in a supermarket.

The economics of self-selection versus clerk service is also becoming a problem more and more apparent in the drug store. With the thousands of items and brands now finding their way to over-the-counter position in the modern drug store, new ways are being sought to handle this variety.

Mr. Deskey makes a suggestion for a large island dispenser, which might contain packages of aspirin, dentifrices, shave preparations, toothbrushes, etc., which operates on the principle of the slot machine (Fig. 4). Coin slots for dimes and quarters might be included so that no clerk service would be necessary for these units. If coin slots are not used the articles may be dispensed by push-button control. A convenient wrapping and cash station might be arranged close by where the shopper can take his purchases, the same as he does in the supermarket. Similar slot machine units might be arranged for dispensing chewing gum and candy bars.

A cosmetic counter is an important part of drug store operation. Mr. Deskey suggests three wheels on which would be a selection of powders, lipstick and make-up (Fig. 5). With this device, the shopper could match the shades of her choice by orderly color arrangement. These wheels might be placed as wall fixtures or horizontally as island cases on the floor (Fig. 6). Stock would be kept in a case with an attendant in charge to sell the items by the numbers selected on the wheels. Walls would be used for displays of the various brands.

The blueprints for the Schulte tobacco shops have been designed from data obtained by tests and experiments carried on in present stores. "They not only utilize a typically restricted site very efficiently, but in such a way as to appear spacious and stimulate customer appeal both from the street and within the store area," according to Mr. Deskey.

In these plans the whole store is conceived as a huge "display window" for the packaged merchandise sold in a tobacco store (Figs. 7 and 8). A "vanishing front" is achieved with glass window section which lowers below floor level in good weather for direct street access to tobacco counters located just be-

hind window line at front. A maximum perimeter of display and stock space is provided without the appearance of "crowding" or loss of continuity. A "saw-tooth" arrangement of bays provides more visibility of merchandise.

Rotary vending and display units for merchandise display are arranged on all four sides of the store, three within and one on the street. Manually operated, these facilitate self-selection and stocking. Some of these rotary display units are planned for self-selection of matching accessories, such as ties and shirts.

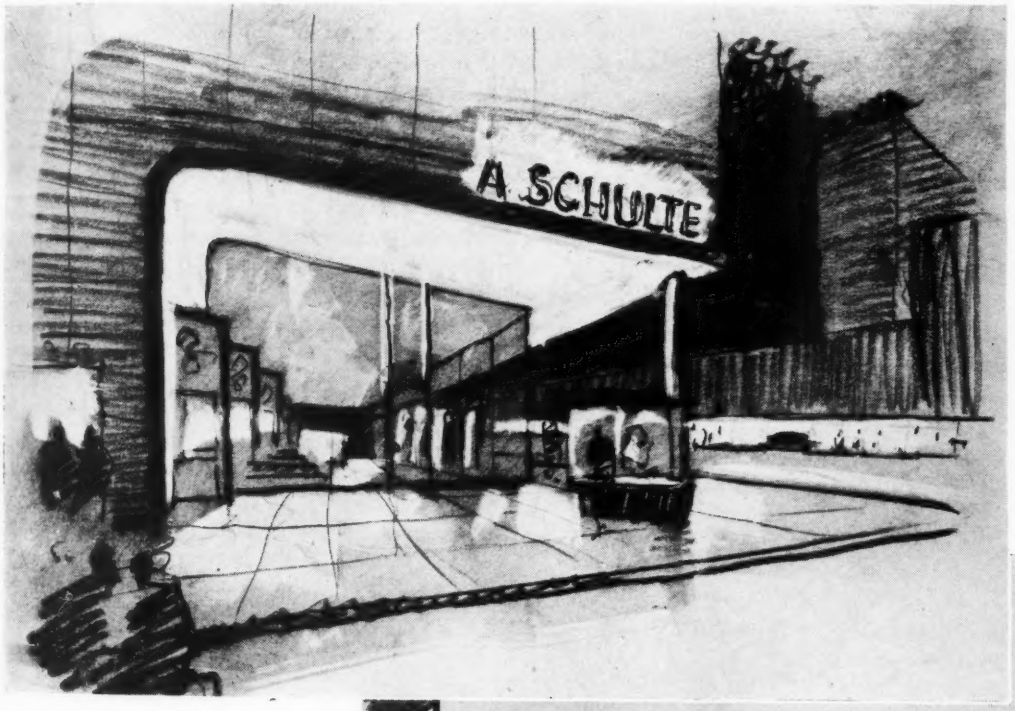
Cyclic poster displays at top facing the street are designed to provide for rear projection of the posters and to operate in succession. Additional tobacco poster spaces are provided at each alcove along the inner wall, projecting through to the street at the front in a jumbo size poster display.

Tobacco sales counters occupy dominant positions at entrance points with haberdashery items in a secondary but immediately adjacent position. Located at the rear and visible through a glass window is a "Humidor," a selling feature dramatizing the idea of fine tobacco satisfactorily conditioned and maintained under proper temperature and humidity. The "humidor" counter accommodates a mail and special order department for personal service. It also offers emergency space for rush-season trade.

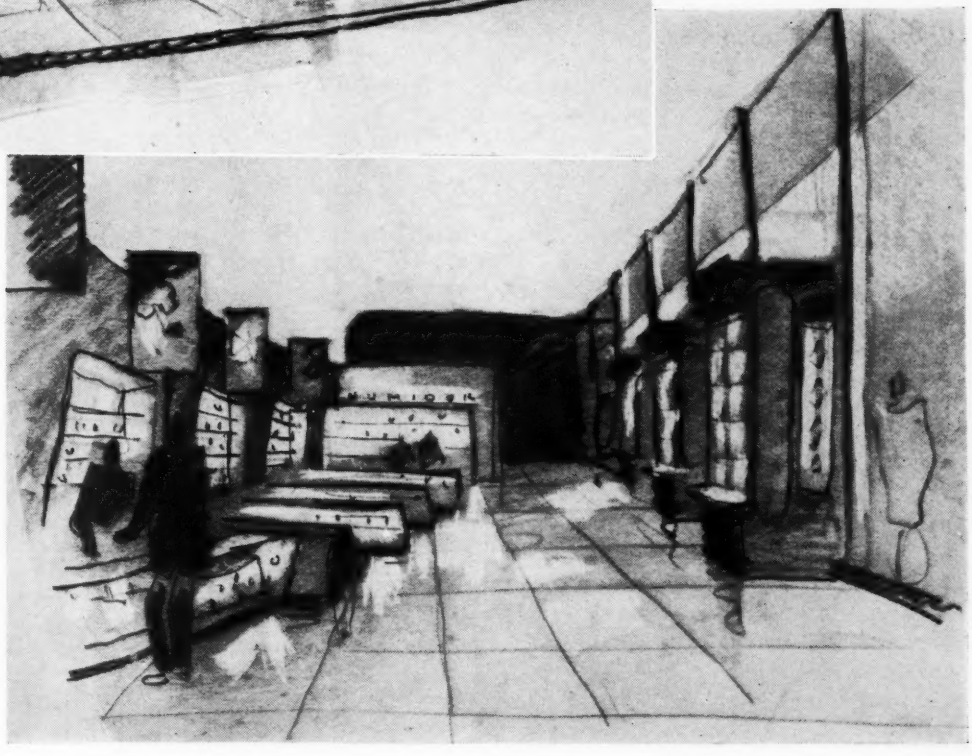
A recessed window line invites a short-cut around the corner just out of the main traffic stream and invites the passer-by to slow up and observe display features. This arrangement eliminates the need for an awning. It also permits an "island" display at the corner. The main entrance is adjacent to the invited short-cut traffic.

Indirect flood lighting from concealed spaces is provided throughout, with particular stress on the highlighting of the merchandise and package display sections, thus drawing more attention to the merchandise. The package designer must consider carefully in future plans how his packages will appear in such lighting.

The suggestions in this article, it is believed, will give further indication of the vastly changing merchandising methods that may be expected in the future. They are presented in the hope that they will be helpful to the manufacturer of packaged merchandise in anticipating some of the package problems that will confront him.




*7—Blueprints for Schulte postwar tobacco stores visualize entire store as huge "display window" for packaged merchandise.*



*8—Rotary vending machines facilitate self-selection and stocking. Saw-tooth bays provide visibility for merchandise.*

# Ration packs . . experience brings improvements

Packaging of field rations to keep the American soldier the world's best fed is a continuing development. While the types of rations—B, C, K and 10-in-1—are now well standardized and proved by experience, constant improvements are being made in calorific content and variety, and in providing the little comfort accessories that mean so much to the man in the foxhole.

In these developments, packaging reaches new heights of efficiency. It may be said that, through packaging, the American soldier who marches into Tokio will be even better fed than his buddy who cracked the *Festung Europa*.

Credit for improvements in Army ration packaging goes to the QMC Subsistence Research and Development Laboratory in Chicago, which functions under the Military Planning Division of the Office of the Quartermaster General, as well as to the Package Testing Laboratory of the Washington Q. M. Depot.

## The new "C" ration

The new "C" ration should stand for a long time as a model of utmost use of packaging cube. Without making any change in the dimensions of the six round cans which comprise a daily ration for one man, or of the shipping case which holds 48 of these cans, the Army has been able to raise the calory content of each daily ration from 2,700 to 3,150, to provide immensely greater variety of menu, and to provide certain extra treats and comforts as morale builders.

***1**—Showing how ration accessory packet fits in interstices between "C" cans. Shipping case is now V-board instead of wood; change was announced only last month.*

PHOTOS 1, 8, 10, U. S. ARMY SIGNAL CORPS

The "C" is the standard ration for men in forward combat areas for whom no messing facilities are available. Originally it was felt that no unit would have to subsist on "C" for more than a few days before a field kitchen could be brought up. But as the "war of movement" developed in Europe it was found that forward units might operate for weeks at a time without a regular mess, and it became imperative to provide appetizing variety and the utmost of calory content.

Originally the issue of six cans per man per day provided three meals of two cans each—one a meat product or combination, and the other containing biscuits, beverage, sugar, candy, etc. There were only three types of meat combinations, so that the main course, although it might vary from meal to meal, was the same from day to day.

In its new form, the "C" ration has been increased from three meat units to ten, and from three biscuit units to six. Thus it is possible for the soldier to have a different menu for each meal and for each day in a six-day period.

Two new products, specifically designed and packaged to fit the "C" can without an atom of waste space, are largely responsible for the new variety in the biscuit-beverage (B) unit, and both have proved immensely popular with the troops.

Because this generation of Americans appears addicted to "wheaties" for breakfast, the Chicago laboratory figured out a way to include dry cereals, all wrapped up with their own milk and sugar. To save space, the two ounces of dry cereal are pre-mixed with dried milk and sugar, then compressed into a circular disc approximately $^{11}/_{16}$ of an inch in thickness and just under the diameter of the inside of the can. Compression is not severe; it is not intended primarily to reduce the bulk of the product but to hold it together so that it may be machine-wrapped and sealed in cellophane. In fact, the problem in compression was to get a cake that could be wrapped and yet not break the cereal down too fine. A binder mixed with the cereal helps to form it.

It is easy for the QMC's packaging experts to devise some such pack in their laboratory, but getting it into production at the rate of 2,000,000 packages a week is a different story. The Cambridge Tile Co., Cincinnati, is largely credited with having solved this particular problem. Adapting existing equipment, Cambridge Tile developed three different methods of compressing and wrapping, and with a force of 50 girls now turns out 1,500,000 packages a week. One improvised machine does 90 a minute, wrapping and sealing the cakes in MSAT 86 cellophane or the equivalent.

The soldier can eat the cereal as a cake or crumble it in an empty ration can and add water from his canteen to reconstitute it "just like home." The item is very popular with the troops. Cereals used are the regular ready-to-eat cereal products of Quaker Oats, General Mills, General Foods and Pillsbury Mills. Several other companies, in addition to Cambridge Tile, are doing the compressing and wrapping.

The cereal cake simply takes the place of one of the round biscuits in the B unit.

THE OLD 'C' RATION
2,700 Calories
3 Biscuits and Beverage Units
3 Meat Units

THE NEW 'C' RATION
3,150 Calories
6 B Units
10 M Units
Plus Accessory Packet

HOW IT'S PACKED—WHAT'S IN IT

48 cans to the case
8 complete rations
8 accessory packets

B1—. Biscuits, Type IV; Compressed Cereal; Candy Coated Peanuts; Candy Coated Raisins; Sugar; Coffee.

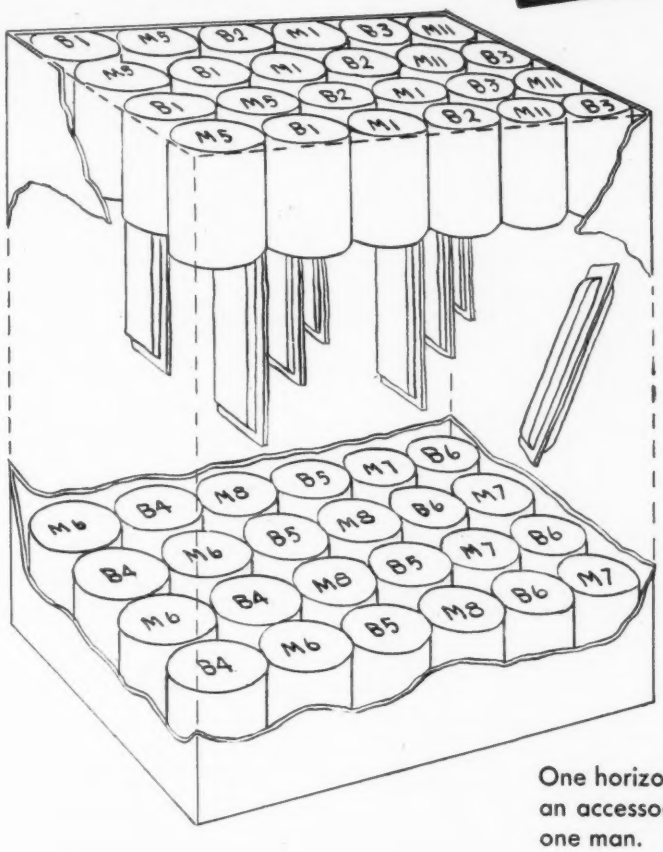
B2—. Biscuits, Type V; Lemon Beverage; Sugar; Hard Candy.

B3—. Biscuits, Type 1; Jam; Caramels; Cocoa Beverage.

B4—. (Contains same components as B1.)

B5—. Biscuits, Type V; Orange Beverage; Sugar; Hard Candy.

B6—. Biscuits, Type I; Jam; Coffee; Sugar; Caramels.




M1—Meat and Beans.

M3—Meat and Vegetable Stew.

M4—Meat and Spaghetti.

M5—Ham, Egg and Potatoes.

M6—Meat and Noodles.

M7—Pork and Rice.

M8—Frankfurters and Beans.

M9—Pork and Beans.

M10—Ham and Lima Beans.

M11—Chicken and Vegetables.

Accessory Packet—Matches, Cigarettes, Chewing Gum, Halazone Tablets, Toilet Tissue.

One horizontal row of six cans, plus an accessory packet, is a ration for one man.

2

**2**—*This diagram shows how menu variety is achieved in a typical new efficiency pack of "C" rations.*

Eventually all B units of the "C" ration also will have sugar for beverages compressed and wrapped the same way in the form of a disc. This is another example of space saving combined with improvement in menu. Formerly sugar was packed loose in a small carton or as cubes; either way there was waste space around it and troops complained that they didn't have enough sugar for their coffee and lemon drink. In the new form about 12 grams more of sugar are provided in the same space.

Jams and jellies not only are popular with the troops, but they are one of the finest of items for a concentrated ration as a source of both calories and vitamins. Guava jelly, now widely used, is the richest known source of Vitamin C. One of the QMC's toughest problems was how to get $1^1/_2$ oz. of jam in the "C" ration. It obviously required either glass or metal, and a glass jar could not be found that was deemed light enough in weight or that would fit the ration can.

The solution was a flat, round tin can about the same size and shape as the cereal disc, which again merely replaced one of the standard biscuits in certain of the B-unit issues. The can is made is three pieces—the shallow body, a disc for the top, and an aluminum band with a tearing tab which is mechanically crimped around the top edge after filling to effect an hermetic closure. Body and top are of 1.25 lb. hot-dip tinplate. The band is gold lacquered on the inside. The can is filled on a special machine at the rate of better than 100 a minute. It opens easily, without a tool, and provides a full opening for easy removal of the jam or jelly.

One problem in connection with the jam can was the lack of natural rubber for the sealing gasket. Vulcanized Buna-S rings were tried and found acceptable, but they couldn't be obtained in the 2,000,000-a-week volume required. The solution was provided by one of the chemical companies, which developed a flowed-in gasket of a plastic compound, elastic and strong enough to withstand the sharp edges of the metal.

The jam cans are now being filled by the H. J. Heinz Co., Pittsburgh; Jewett & Sherman, Cleveland; the Griggs-Cooper Co., St. Paul, Minn., and the Goodwin Preserving Co., Louisville.

## "C" ration accessory pack

Not content with filling the cans to the last gram and calory, QMC next worried about the shipping space being wasted in the interstices when the cans were packed 48 to the case. It was recognized that there would be more room for food in

the cans if the cigarettes and chewing gum could be taken out and combined in an accessory pack with certain other needed items. Chewing gum had been something of a problem, anyhow, because of its tendency to transmit taste to the food items.

Accordingly, a ration accessory pack was made up in the form of a stick, containing three packages of three cigarettes each, or a special square package of nine cigarettes; two pieces of candy coated chewing gum in the customary wrap; a tiny vial of 12 halazone water-purification tablets; a roll of 12 sheets of olive-drab toilet tissue, wrapped around the halazone vial, and a book of 10 matches.

In considering the wrap for this pack, there was no problem of breakage, but it was necessary to have high moisture-vapor protection (for the cigarettes and chewing gum); high resistance to abrasion; and a non-chemical outer surface to avoid corrosion of the adjacent cans.

The package adopted is one of the interesting examples of war-developed laminations. From the outside in, it consists of waxed, non-chemical kraft paper, laminated with asphalt to lead foil, and the foil coated on the inside with polyvinyl butyral to provide a heat-sealing surface. A strip of this material is folded lengthwise over the accessory items and heat sealed firmly on the three open sides, forming an air-tight, vapor-tight, waterproof envelope.

With the fins folded down, this forms a rectangular package approximately $1^1/_4$ by $1^1/_4$ by 7 in., which fits snugly in the $1^1/_4$-in. interstices between "C" cans in the shipping case. Weight of the kit packed is just under 2 oz. Eight of the accessory packets are put in each case (Fig. 1), and the ration thus provides one a day per man with the six cans of food. Experience has shown the package to be highly successful; it doesn't tear in shipment and doesn't affect the cans. It brings the important morale items to the soldier in top-notch condition.

Specifications require that the ration accessory items be "assembled and heat sealed in a laminated foil-kraft bag. The bag shall be flat or envelope style, constructed from a sheet of No. 1 kraft paper containing no size or alum and having a minimum basis weight of 30 lbs. per ream (24 by 36—500) waxed with a minimum of 4 lbs. of a suitable paraffin having a melting point (ASTM D 87–42) of not less than 132 deg. F. and laminated with not less than 15 lbs. per ream of a special asphalt compound having a softening point (ASTM D 36–26) of about 145 deg. F. to a composition lead foil having a thickness of not less than .001 in. and coated on the foil side with an even film of polyvinyl butyral weighing not less than 30 lbs. per ream (24 by 36—500). Alternatively, in place of the film of polyvinyl butyral, a sheet of 450 MSAT-82 or 450 PMB2CS cellophane shall be laminated to the foil and coated with a film of heat-sealing compound.

"The bag shall have inside dimensions not greater than $2^1/_4$ in. by $8^1/_2$ in., and when filled and sealed and the fins folded down, the package shall have outside dimensions not greater than $1^1/_4$ by $1^1/_4$ by 7 in.

"At least 95% of the completed packets, tested according to specified methods, shall be dry inside when opened."

Small folding can openers are included in this accessory packet. These pocket-size can openers are made of tempered tool steel and may be used for opening hundreds of cans.

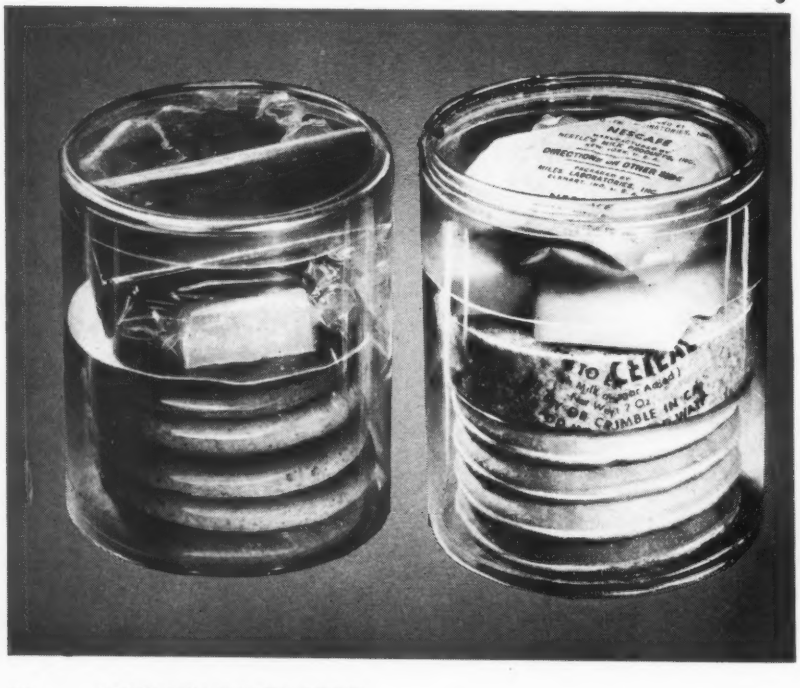
To simplify distribution, the "C" ration cases are so packed that each horizontal row of six cans provides one day's ration for one man. As a row is peeled off, the accessory packet between the cans comes easily to hand, making it possible to issue a complete ration quickly, even in the dark. Cans are packed six in length, four in width and two in depth. Detailed packing schedules are carefully worked out to provide the utmost variation of menus. Each tier in each case provides a different one of the six standard menus. The diagram (Fig. 2) shows a typical pack consisting of Menu 1 on the top tier and Menu 2 on the bottom tier.

## Parachute emergency ration

In this flying war, thousands of flying soldiers—either paratroopers or airplane crews—are required to "bail out" over

***3—Transparent cans compare former pack of "C" ration B-unit (left) with new, showing how waste space has been utilized. 4—Two new items in B-unit are compressed cereal and can of jelly which fit into "C" can.***

3

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hostile or unsettled territory with no knowledge of how long it may be before they can come in contact with a source of food supply. Each man has to take his food with him.

The problem of designing a lightweight, pocket-size ration kit with high sustenance value was a nice one for the QMC experts. It has been nicely solved with a deep-drawn tin can, with crimped-on top, which is about the size and shape of a large sardine can. The hermetically sealed can is water- and moistureproof as well as resistant to changes in air pressure. It fits in an inside pocket of the paratrooper's suit, or in the aviator's vest pocket or seat-type parachute.

Although outside dimensions of the can are only $5^5/_8$ by $3^3/_8$ by $1^1/_4$ in., the flier knows when he jumps from his plane that he is taking with him: 4 oz. of sweet chocolate with Vitamin B-1, a packet of hard candy, a 1-oz. block of dehydrated cheese and crackers, two cubes of sugar, 3 cigarettes, 4 pieces of candy-coated chewing gum, a bottle of 12 water-purification tablets, three bouillon cubes and soluble coffee sufficient for two 8-oz. cups. Also included is a moisture-vaporproof envelope in which the rations may be preserved after opening.

The problem of opening the can is not overlooked. A tiny pocket can opener is enclosed in a small kraft envelope, with instructions, and affixed to the top of the can with cellulose tape. Contents of the can are listed in black lettering on the top panel.

## Field hospital ration

The QMC has developed a special hospital ration, carefully designed for manual transport to emergency hospitals in the forward fighting zones, consisting of several readily assimilated foods with universal eye and appetite appeal.

The ration is sufficient for 25 men for one day, and may include canned fruit such as apricots, pears, peaches, pineapple or fruit cocktail; fruit juices such as orange juice, grapefruit juice or a blend of these; condensed soup; soluble coffee or cocoa; sugar; evaporated or powdered milk, and malted milk tablets. Each of the components is packed in metal containers and the entire ration is packed in a nailed wooden box especially marked with the Red Cross insignia. It weighs about 60 lbs., making it easily transportable on one man's back.

The hospital ration is intended to supplement the standard field rations, such as "C" and "K," ordinarily served to active men in combat areas with larger quantities of soft foods and luxury items which have been found desirable for the diet of hospitalized soldiers.

Specifications permit dry products, such as the soluble coffee, cocoa powder, powdered milk and granulated sugar, to be packed in cans which have a body of .50-lb. electrolytic tinplate and ends of bonderized blackplate coated on the inside with a suitable enamel. The fruits and liquid products generally require 1.25-lb. hot-dip tinplate for body and ends, although in some cases both body and ends of electrolytic are

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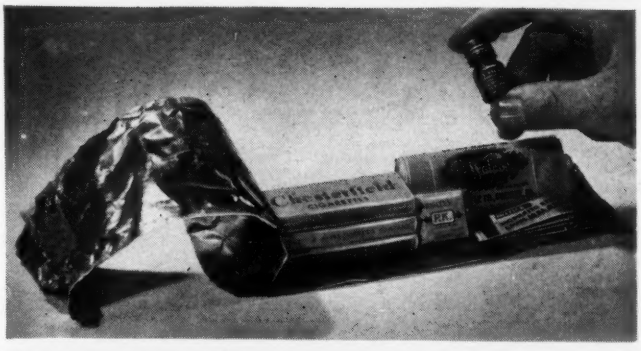


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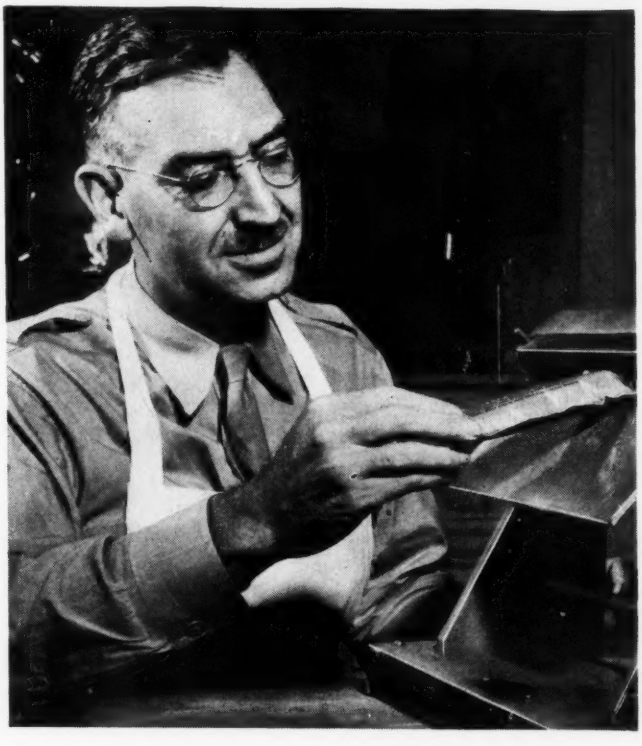


***5**—Heat-sealed cellophane wraps cereal; disc crumbles easily when opened. The powdered milk and sugar make complete cereal dish when water is added.* ***6**—Aluminum ring seals the gasketed top of jelly can—opens easily by means of tear-tab.* ***7**—World's smallest bottle, containing 12 water-purification tablets, is in accessory packet. Envelope is laminated special kraft, asphalt, lead foil and polyvinyl butyral, heat-sealed on three sides.* ***8**—Simple device for sealing the pack is demonstrated in Chicago QMC laboratory by Maj. James d'A. Clark.*

permitted if suitably enameled. When tea is included, ten 3-gram tea bags are to be packaged in a round key-opening can made of .50-lb. electrolytic tinplate. Malted milk tablets are permitted in electrolytic cans fitted with a stepped flange opening and closed with a curled-edge, compound-lined, snap-on cap.

The cans are assembled in a snug-fitting nailed wood box, with cans separated by full-height slotted partitions made of V3c board. A pocket-style can opener is included in each case, attached to the corrugated fibre pads. The boxes are steel strapped and a Red Cross insignia 3 by 3 in. printed on the outside in bright red.

## "Ten-in-One" field ration

In modern warfare, the intermediate zone between the "front" and rear is quite extensive. Due to long-range artillery and the airplane, the grouping of soldiers to mess as a unit is undesirable. It thus becomes necessary to have a ration similar to the "B" for diet, but with a flexibility of distribution almost as great as combat rations.

The "10-in-One," whose name implies ten men for one day, is the Quartermaster's answer to the problem. It is so packaged that it can be used to feed as few as five men at a time, up to an infinite number. For purposes of requisitioning, the figure ten simplifies calculations. The case and contents, weighing a total of 45 lbs., can easily be carried on a man's back.

If weight had been greater, there would be a tendency to drop it and thereby decrease its packaging efficiency. If the case were lighter the men would throw it and damage the cases and contents.

The "10-in-One" is designed to be distributed for the evening meal. As far as distribution is concerned, it means only one-stop handling for three meals. Breakfast and dinner are planned for a five man or multiple feeding unit. However, at noon or during the day activities may be such that it would be dangerous for even five men to eat in a group. Thus the dinner menu is so packaged that each individual can carry his own meal and not depend on a group which is more susceptible to danger during a tactical operation in any combat area.

The cases having five distinct and different menus are marked serially. Such a designation informs the soldier drawing a daily supply that he can have 15 different consecutive meals. This is, indeed, a far-cry and definite improvement over the monotony of the "K" Ration with its similar ration day after day.

In addition to the menus as shown, each case for the day contains a supply of cigarettes, water purification tablets, matches, salt, can opener, toilet paper, toilet soap and paper towels.

The food rations are made up in several different packages, including a "Partial Dinner Unit" in five different menus, all of which include an orange, lemon or grape beverage powder and sugar for sweetening the drink. This unit goes in a very closely packed square chipboard carton.

A recent improvement in the dinner unit, devised by the Chicago QMC laboratory, is the forming of sugar in a compressed block, allowing the inclusion of 34 to 36 grams of sugar, as against the limit of 23 grams in the small carton formerly used, without taking up space other than that which previously was wasted. Although this seems a minor improvement, it was important to the morale of the troops, who had complained that they had insufficient sugar properly to sweeten the lemon drink.

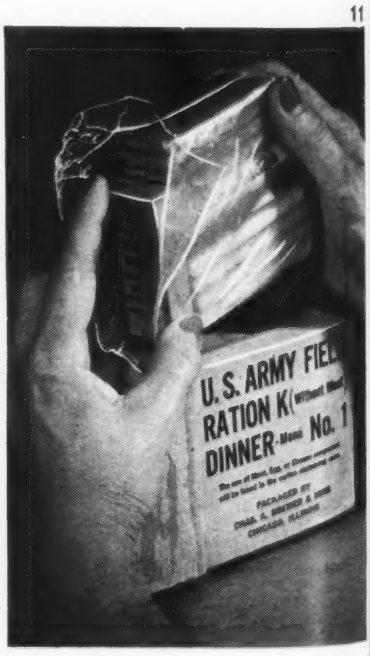
The new sugar block is rectangular, measuring, when wrapped, not more than 3 by $1\frac{1}{4}$ by $\frac{9}{16}$ in. The block will dissolve when dropped in water at approximately the same rate as the same quantity of unpressed granulated sugar. Specifications require that the block be wrapped and heat-sealed in either du Pont 450 MSAT-86 or Sylvania PMB2CSX cellophane; that the wraps conform closely to the block and be securely sealed to prevent sifting, and preferably that they be opened with a tear strip.

***9**—New emergency parachute ration closed (above) and open with contents displayed. Opener is affixed to each can.* **10**—*Contents of field hospital ration; it provides appetizing soft foods for 25 men for one day. In wood box, it weighs 60 lbs.* **11**—*Wasted space with boxed granulated sugar in old-type dinner unit of 10-in-1 ration. New style has compressed cellophane-wrapped sugar block filling space, providing 12 grams more sugar.*

9

10

11



NOTICE TO POSTAL SERVICE IN CANADA
DO NOT DELIVER IN CANADA
THIS PACKAGE IS FOR EXPORT ONLY.
CUSTOMS DECLARATION
No. 4
WRIGLEY'S SPEARMINT THE PERFECT GUM
ON ACTIVE SERVICE 2740
POST CARD
2740
PUT POSTAGE HERE
To
WM. WRIGLEY JR.
COMPANY, Limited
TORONTO
CANADA
Due to a shortage of raw materials, we're not able to make all the chewing gum we'd like to.
Your home folks have worked out a plan with us so YOU boys (and girls) OVERSEAS get first call—a whole box!
We would appreciate hearing from you.

*Gum package box for Canadian armed forces is in heat-sealed laminated moisureproof bag inside folding carton.*

# *Wrigley gift box . . . for Canadian soldiers' morale*

Men and women in the Canadian armed forces like chewing gum, but in Canada chewing gum and cigarettes are not official military issue.

Canadian boys overseas have felt increasingly the lack of some of the small amenities carried by American fighting forces while they had to depend on picking up such items at canteens when they could get them.

For the past three years, Wm. Wrigley, Jr., Co., Ltd., of Toronto, had been trying to effect some arrangement through the Ottawa military and civilian authorities so that whatever part of the Canadian Wrigley Co.'s production was needed overseas would go through government sources.

On May 1, 1944, American Wrigley Co.'s entire production was taken over by the War Department and Navy, leaving none for wholesaler, retailer or consumer in the United States.

This increased pressure on the Canadian company from Canadian service men and women overseas for more chewing gum. Of course, the requirement for chewing gum by the fighting forces had already been established and the Wrigley Co. had always given precedence to war orders.

However, to assure more Wrigley's gum getting directly to Canadians overseas, the company developed a special plan.

Now Canadian civilians at home can order a 20-package box of Wrigley's Spearmint, Double-mint or Juicy Fruit chewing gum for a dollar from any retailer who assists the customer to write up the order on forms provided by the company. The retailer collects the money for the box of gum, retains a compensation for his service and sends the balance of the remittance and the completed order form to the company.

The company then specially packs the box of gum, pays the mailing charges and ships the package to the overseas address. The unit contains a standard box containing 20 packages of gum. This is packed in a protective heat-sealed bag comprised of 40-lb. kraft laminated with asphalt, lead foil, moistureproof cellophane to keep the gum in perfect condition until the soldier receives it. This bag is then slipped into a folding carton. An address label is then sealed to the package with waterproof glue. The package is designated for export only. On the label is a place for customs declaration, list of contents, name of recipient and name of the sender. Inside is also enclosed a postcard already addressed to the sender so that the soldier may immediately acknowledge receipt of the gift. There is also enclosed a postcard which may be sent to the Wrigley Co. On this is a message from the company which discusses the shortage of chewing gum and states that the gift is the result of a plan worked out by the home folks so that the "boys and girls overseas will get first call—a whole box." It ends up with a line from the company; "We would appreciate hearing from you."

The Canadian Wrigley Co. Overseas Gum Plan was brought to the attention of every retailer in Canada through a letter sent by Allan Ross, president of the company.

# DESIGN H

## "King Cotton" and family

Several months ago John H. Graham & Co., Inc., which sells an extensive line of cordage under its own brand name, "King Cotton," determined to restyle its packages to meet postwar competition. The old style packages (illustrated at left) were criticized ruthlessly and it was found that: (1) Too many elements on the labels were merely decorative. (2) The relative emphasis of the copy was not good. (3) Separate trade name and mark were not necessary. (4) The colors, purple-blue and yellow, were good. (5) Standardization of letters and coloring was needed. (6) Various faces of the boxes competed for attention.

In addition to a desire to make each package 100% efficient, it was decided, also, to do something to move these products, ordinarily shelf items, to a preferred position on the counter.

The first move was to simplify the design and establish family identity. Next, the amount of type on each package was cut down to a minimum and more prominence given to the trade name and type of cord. Finally little refinements were made on products like the sash cord and the venetian blind cord carton. In one case the old label showed the name and product on one side only; the new label now repeats the information on both sides thereby making both the brand, type and length of cord immediately recognizable from any angle. The old style venetian blind cord carton showed six rolls in an upright position and as two or more were removed a roll always fell down. Now the rolls are displayed flat with labels showing.

*Credit: Design, Frank Condon, N. Y. Cartons, Shuttleworth Carton Co., Inc., N. Y. Labels, Martin Press Inc., N. Y.*

## Spare tanks for blimps

The Navy's lighter-than-air craft patrolling over American waters 24 hours a day must carry extra gasoline. Because of the nature of the craft it was imperative that the auxiliary tank for this gasoline be extremely light in weight and at the same time strong enough to withstand the effects of high test aviation fuel.

After much experimentation, canvas was finally selected as the material for the "spare" tank. But, the convas had to be made leakproof and rigid. This was achieved by impregnating it with a new thermosetting resin—Laminac. The resulting material was then formed over a mandril and the ends cemented on.

The finished tank, illustrated here, is so light that it can be hoisted onto the shoulder of a member of the crew. It will hold a specified quantity of high-test fuel and, of utmost importance, the tank can be refilled and reused several times. In spite of its light weight, the tank is extremely strong with a hard surface.

According to the manufacturers of the thermosetting resin used to impregnate these canvas tanks, this new material can be used in a similar manner on cloth, fibre glass or other fabrics to produce strong lightweight containers for various liquid products. At the present time, of course, the Navy has priority on this material, but, postwar, this type of container may find a very useful place in air transport and wherever light weight is an important factor.

*Credit: Thermosetting resin, American Cyanamid Co., Plastics Division, N. Y. Tank, Crosley Marine Corp., Miami, Fla.*

# HISTORIES

## Easier to sell; easier to buy

To keep in step with the fast tempo of modern merchandising, the Remington Arms Co., Inc., Bridgeport, Conn., has revamped its ammunition packages. Using the same colors, red and green, so long associated with Remington in the minds of jobbers, dealers and sportsmen, the company has changed the color ratio on its shot shell packages to add to their attractiveness and ease of identification. In addition, the brand names and specifications on the new packages are so arranged that easier and quicker identification of gauges and loads is provided for both the seller and buyer. (Old package below in top photo.)

The familiar "red ball," so well known to the trade for generations, appears on all packages, as does the famous Du Pont oval. In the interests of simplification, Remington has shortened the name of its long-range shotgun shell from "Remington Nitro Express" to "Remington Express" and conspicuous on the shot shell package is the word "Kleanbore" which in itself tells the story of Remington's non-corrosive priming.

Another improvement throughout the line of shotgun, rifle and pistol ammunition packages is the use of larger type in the designation of gauges, calibers, shot sizes, bullet types and weights and powder loads. The new motif continues throughout the packaging process, from the cardboard boxes of each shot shell and cartridge which range from tiny BB caps and the mighty big game smashers, to the wooden cases in which they are shipped to the distributors.

These changes reflect the opinion of Remington sales and advertising executives that quality merchandise, properly packaged, is "easier to sell and easier to buy."

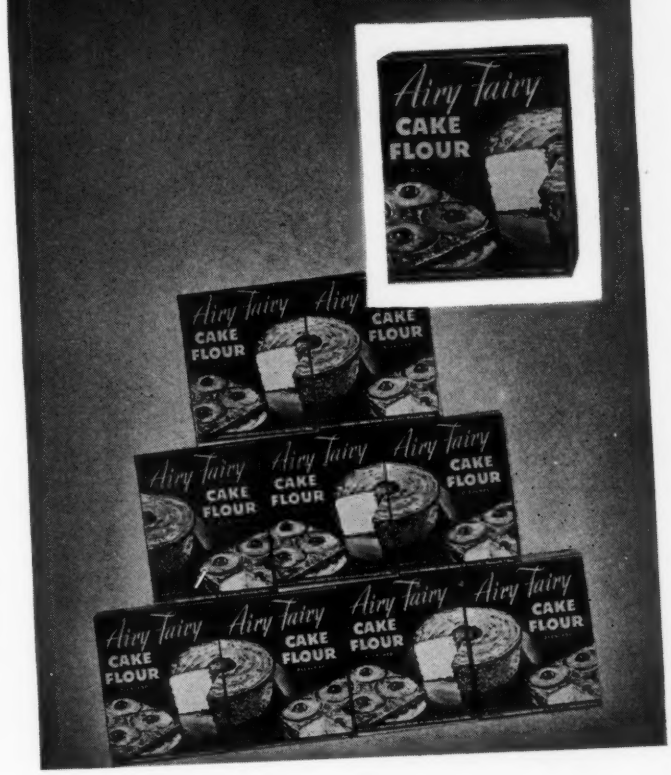
## Double eye appeal

The idea of using a combination of the front and back panels of a food package to double the size and more than double the eye-catching attraction of the illustrations is, as far as the Commander-Larabee Milling Co. knows, entirely new in food package designing. The new package for Airy Fairy Cake Flour does just this.

Illustrated is just one of the displays made with the new package. Store owners and operators receive diagrams for making a variety of displays without the use of any materials except the packages themselves. The package not only lends itself to shelf display, but the combination of front and back double-size illustrations make it practical for two-sided and four-sided aisle or table displays—each side presenting a different appeal to the shopper.

As an example, one side spotlights in double size an illustration of an angel food cake, while the other side highpoints an up-side-down cake. A totally different display aspect is given by alternating tiers, one showing angel food and another up-side-down cake. The corner columns of a four-sided display can be made of single packages, one above the other, one showing the front and one the back, thus alternating the two cakes and creating a totally different effect.

The display possibilities of these new "front and back" packages will undoubtedly arouse much interest among the men who are planning postwar packages and displays.




*Credit: Carton, McGill Lithograph Co., Minneapolis, Minn.*

# Picture-Story Wrappings

Everybody likes a picture story. For certain products the designer can make use of the package to tell a picture story. This is particularly true in the case of gift packages and for packages with seasonal appeal, such as Christmas or Easter.

The picture story may also tell what is in the package; how to use the product it contains, or it may even be used in certain cases as a tie in with community or national tourist promotional themes.

Emmy Zweybruck, a Viennese designer now in this country, developed an interesting two-dimensional technique for this type of treatment for Altman and Kuhne candies in Vienna before the war and is now carrying out this same technique for a number of firms in the United States.

Much of her work has been in the field of special wrapping-paper designs with over-all patterns telling a story. The pre-war success of this type of design, she believes, will warrant further development and more frequent use in postwar packaging. Because of their continually repeated patterns, such designs have the distinction of long-memory value. Economically they are efficient because they can be cut to any size or shape without destroying the elements of the design.

During the period just before the war, when the music festivals at Salzburg drew thousands of tourists to Austria, Mrs. Zweybruck designed a paper for Altman and Kuhne candy boxes sold in Austria. The background of the design was a stylized map of the Tyrol over which were drawn colorful peasant figures in costumes representing the districts of that country and also with symbols representing various products manufactured in the area. The design was such that no matter how it was cut or folded over specially constructed and shaped boxes, the various elements of the design were visible. The boxes were further planned for their re-use appeal—an Austrian gift box which the tourist could take to friends and relatives in his home country—a memento of his trip which the recipient would keep because it represented something he could not get at home.

When Altman and Kuhne introduced their Viennese candies in America, the same type of boxes was retained over here, but Mrs. Zweybruck was asked to design a new paper for the American packages. The essence of Austrian design elements was retained to characterize a confection made in the European manner, but the story became a pictorial recording of the candies themselves on the wrapper in Tyrolian colors on a silver background.

Illustrations on these pages also show how Mrs. Zweybruck has used the pictorial story treatment for other products.

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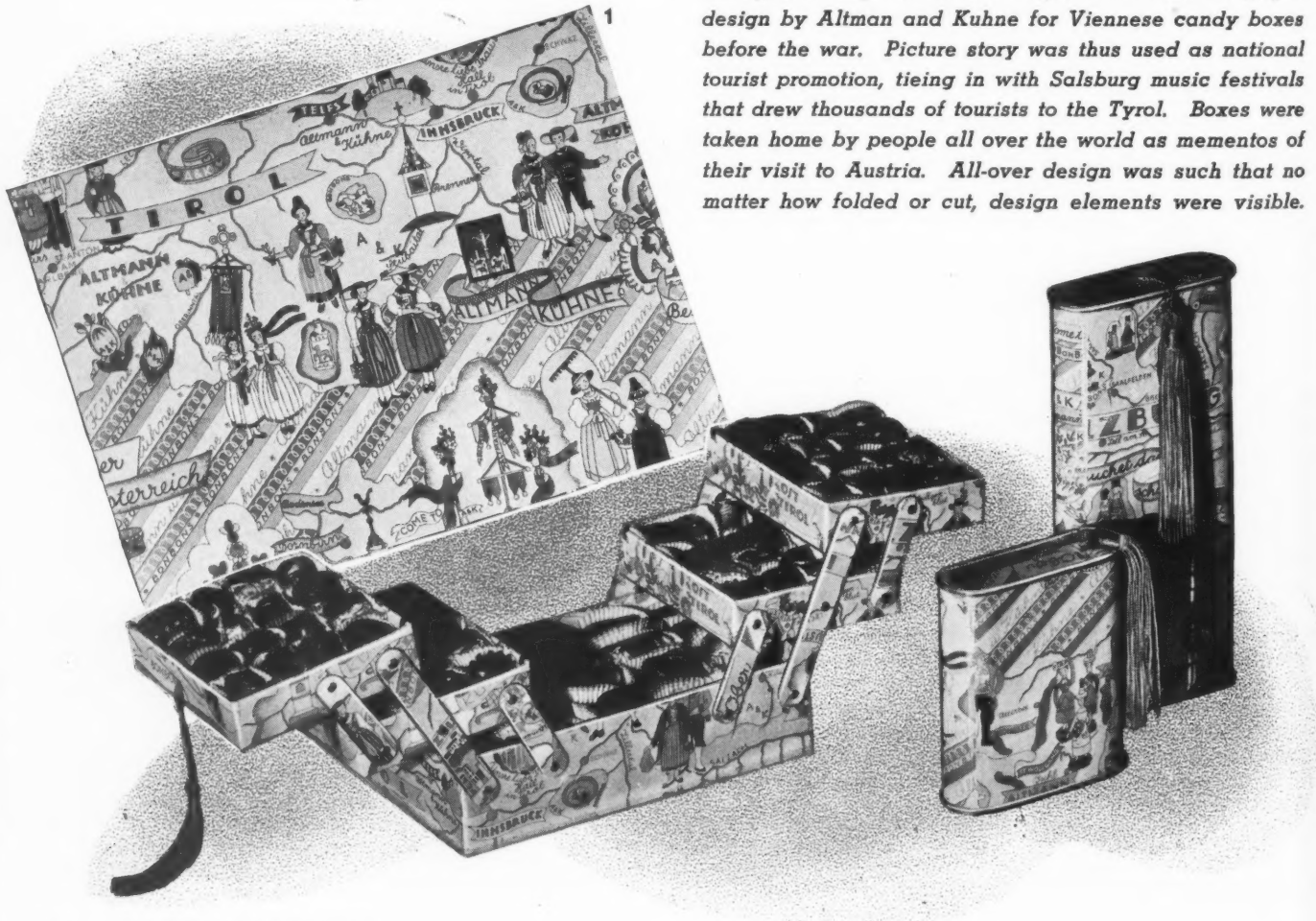


**1**—*Stylized map of Austrian Tyrol was used as paper design by Altman and Kuhne for Viennese candy boxes before the war. Picture story was thus used as national tourist promotion, tieing in with Salsburg music festivals that drew thousands of tourists to the Tyrol. Boxes were taken home by people all over the world as mementos of their visit to Austria. All-over design was such that no matter how folded or cut, design elements were visible.*

A paper for Rena Rosenthal toys carries a variety of bright-colored two-dimensional pictures of wooden toys. For R. H. Macy & Co.'s food department, Mrs. Zweybruck made a highly stylized all-over design of specialty food products—platters of fish, fruits, vegetables, bottles suggesting wines and gourmet cooking sauces. A sophisticated color scheme of blue and pink with chartreuse background was selected. On a travel kit for Kellogg's stationery, product usage is suggested by the picture of an early American railroad train in bright colors running across the center of the decorated portfolio which holds the paper.

Two small kits for Prang Textile Colors, put out by the American Crayon Co., illustrate how the picture design of the boxes may describe the use of the product. A photographic illustration indicating the technique for applying the colors is used as the central theme. The over-all design shows the figures that may be made on textiles with the stencils supplied in the box. To distinguish easily the two sizes of the product available, the background for the design on the larger box is black; the smaller one, pink.

Because packaging is one of the most profitable forms of advertising, Mrs. Zweybruck believes that every large concern should bear in mind the necessity for the most careful composition and presentation of the outer-wrapping of its merchandise.

The very limitations imposed by the war have encouraged the utmost ingenuity on the part of producers and art directors in using the discoveries in new materials as the result of the war, she says, and the resourcefulness that was stimulated by existing conditions will be utilized to their fullest extent in the postwar era.

A package should not only announce a product to the public, she believes, but should stress the outstanding quality of the product. "It is the designer's task," she says, "to express by the package the specific nature (*Continued on page 162*)

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***2—Essence of Austrian design was retained for Altman and Kuhne American boxes to characterize confections made in the European manner. 3—Picture design for textile colors shows how to use product. 4—Illustration of early American train on stationery travel kit also suggests product usage. 5—Food motifs suggest food specialties for R. H. Macy food wrapping (left). Toy pictures decorate paper for Rena Rosenthal toys.***

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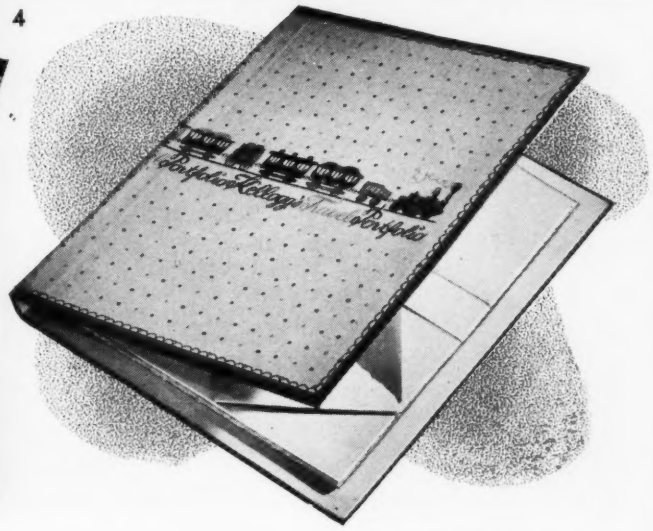

# Billions of bullets . . . packed like sardines

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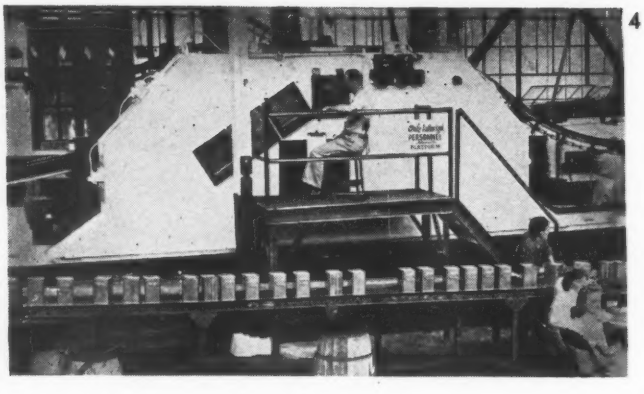

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Billions of rounds of small arms ammunition manufactured by Chrysler Corp.'s Evansville (Ind.) Ordnance Plant are being re-packed under new Army requirements in weather- and corrosion-proof cans which fighting men open with small twist-keys similar to those used on sardine cans.

Requested by the Army and Navy to find a means of protecting calibers .45 and .30 carbine cartridges against the elements and rough handling, and at the same time furnish containers light in weight and convenient to carry, technicians at the Evansville plant started using metal instead of wooden packages, and devised a water-filled trough and a vacuum jar to test the hermetically sealed containers against leaks.

The first step in the new packaging program is to place 50 caliber .45 cartridges in individual waxed cardboard boxes cut, printed and folded on special machines in the Evansville plant. The caliber .30 carbine ammunition is similarly packed in waxed boxes of smaller dimensions.

The cardboard boxes are then conveyed to the "canning" department. The cans, each approximately $7^3/_4$ in. high and wide and about $4^1/_4$ in. thick, are made of heavy gauge sheet steel coated with lead. They are furnished by a vendor—the lids unattached—with the top rim flanged and the lid edge embossed ready for binding. A short tongue protrudes from one side near the top and a handle is astride the side seam.

Workers at large tables place twelve of the waxed cartons containing caliber .45 cartridges, or sixteen of the cartons containing caliber .30 carbine cartridges, in each of the metal cans, making certain for safety reasons that the noses point toward the outside of the cans.

To prevent jostling and to fill out rounded corners, corrugated cardboard is fitted around the waxed boxes inside the metal container. Another similar pad is placed on top of the waxed boxes, along with a strip of adhesive tape which later may be used for emergency sealing.

The cans are then moved by conveyor belts to sealing machines consisting of magnetic chucks which hold the lids in place while riser plates lift the loaded cans into position. Operators using foot pedals start machines which roll the can flange and the lid embossment into a sealed seam. After this operation a simple key made of heavy wire is locked in a loose but ever-ready perpendicular position with the metal tongue near the top of the can.

Conveyor belts again are used to deliver the cans to vacuum-testing tanks. Inferior cans, or "leakers," are detected by the presence of water bubbles, and are discarded for further examination or re-packing. The cans then are exposed to three separate sets of chemical and water sprays

***1**—Machine operated by women places small-arms ammunition in waxed cartons which are in turn packed in hermetically sealed metal cans.* **2**—*Filled waxed cartons are placed, 12 or 16 each, in special metal cans. Cardboard protective liners have already been inserted.* **3**—*Magnetic chucks hold lids in place while riser plates lift loaded cans into position; machine rolls can flange and lid embossment into a hermetically sealed seam.* **4**—*Vacuum-testing machine was invented by Chrysler engineer. Sealed cans travel through water. Workman watches for bubbles.*

which wash and rinse them free of dirt, grease or any rust-producing elements. Then they are dried in ovens and moved to huge vats where they are twice dipped in lusterless olive-drab paint. Later, they are dried in steam-heated ovens. Conveyed to another department, the cans are labeled according to their contents, with yellow paint.

Two of the loaded and sealed metal cans are placed side by side in wooden boxes also cut, assembled, painted and labeled in the Evansville plant. In packing the containers workers are careful that the handles face the ends of the wooden boxes. Wood spacers are inserted to protect the handles and to prevent shifting in transit. The key-sides of the cans are faced inwardly, protected by inserts.

The wooden boxes are made of one-inch soft lumber, painted olive drab with the contents noted in yellow letters stenciled on the lids. Horizontal cleats placed between two vertical cleats on each end of the boxes provide additional strength, and act as handles for ammunition carriers.

Extreme care is exercised in nailing the boxes together so that no protruding nails are present to scratch or puncture the metal cans in shipment. A metal strap is placed across the top of the cans to hold them down before the lid is attached. The lid fastens to four three-quarter-inch carriage bolts running from the bottom to the top boards through rabbet channels in the side boards. Reinforcing bars are placed across the lids, and held in position by wing nuts.

Because of the weather- and water-proofing of the metal cans, and the rugged construction of the wooden boxes, handlers can unload them speedily with a maximum of safety to themselves and the contents. The boxes can even be thrown into the tide without damage. One soldier can easily handle the wooden box, since it weighs 67 lbs. loaded with two cans of caliber .45 ammunition and 57 lbs. loaded with two cans of caliber .30 carbine ammunition. On unpacking the box, a single soldier can run with two cans of the larger shells, each container weighing approximately 32 lbs. and maintain a balanced, carrying position. Two soldiers can each seize a can, with free hands to carry other equipment.

To open one of the boxes, fighters remove the wing nuts, toss aside the lid, seize the cans by convenient handles, twist the cutter-keys to the left and lift out the easily opened waxed cartons. If it is dark, or no lights are allowed, the soldiers can quickly identify either the caliber .45 or caliber .30 carbine ammunition by the touch system. On top of the cans containing the larger cartridges are the embossed figures "45," preceded by four embossed dots forming a square. Lids on cans holding the smaller ammunition are embossed with the figures "30," preceded by a triangle.

From each of the metal cans a fighter obtains 600 rounds of caliber .45 or 800 rounds of caliber .30. If he does not use all of the ammunition at one location he can re-package it temporarily by using adhesive tape packed inside the can.

*Credit: Can, American Can Co., New York.*

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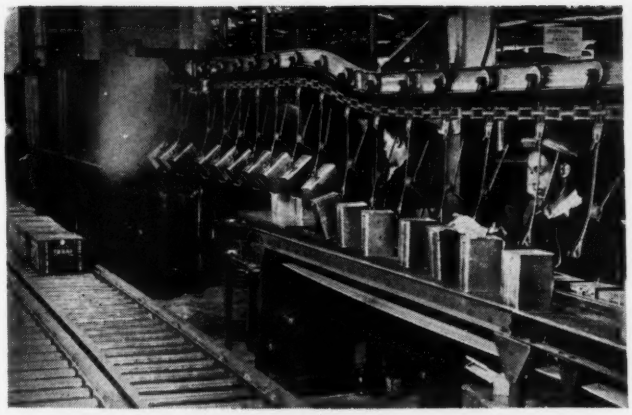

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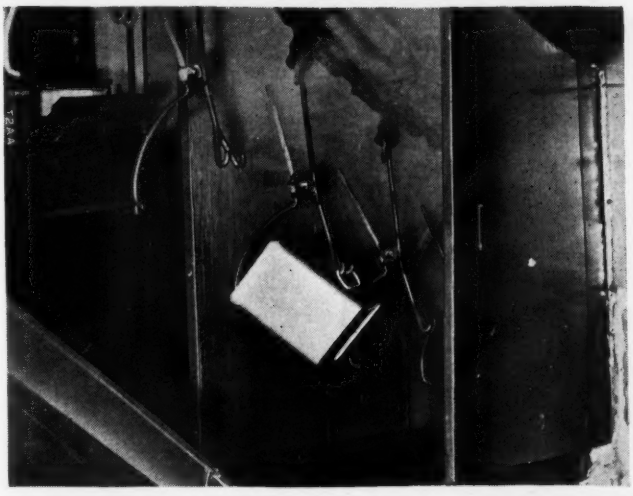

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***5**—Cans are hooked onto conveyor which takes them into tank for chemical cleansing. Entire operation in Chrysler plant proceeds continuously on conveyors. **6**—Held by hooks at proper draining angle, cans proceed from cleansing tank to procoating vats for two coats of olive-drab paint. **7**—Painted and stenciled cans are packed side-by-side in special wooden boxes which also have convenient carrying handles. **8**—Wing bolts connect clamps across the top and rods running down through the box, and are here being tightened by air-operated twirlers.*

# Packaging Pageant

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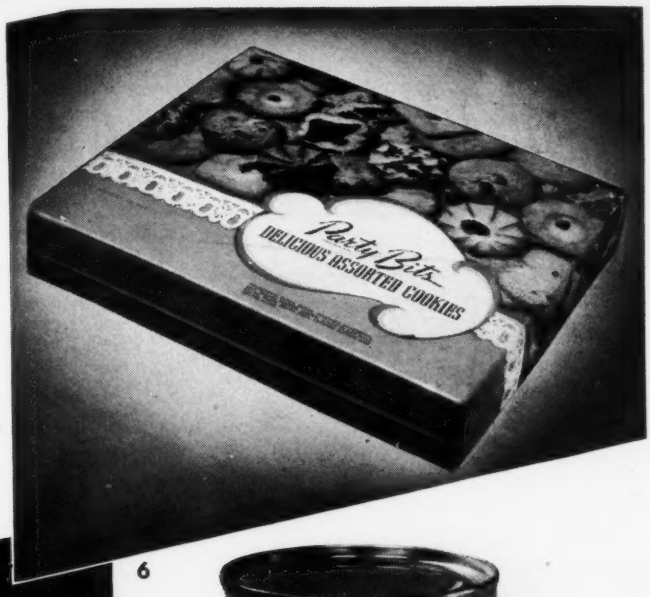


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**1** Laminated cellophane is heat sealed to form the packet inside of a stapled folder for this highly concentrated Express jellied consommé madrilène mix. The paper folder is printed in two shades of blue on white. Each packet contains $^4/_6$ of an ounce and makes four portions. Larger quantities, $3^1/_2$ and 7 oz. each, are packed in glass jars. Folder, Arnold Printing Corp., New York City.

**2** Lipstick refills in attractive gift packages are the latest offering to come from Dermetics. The stick itself is in a hygienically sealed cellulose vial capped with metal. This vial in turn is boxed in a pink and blue folding carton with the familiar gazelle trademark. The vial is suggested as a purse-size container for carrying vitamin tablets. Carton, Union Paper Box Co., Seattle, Wash. Vial and cap, Celluplastic Corp., Newark, N. J.

**3** This is one of Cutex's seven Christmas sets now ready for the holidays. They range in price from $1.50 to $10, this one being in the lowest price range. Its little-larger-than compact size; its fine tooled leather-look finish and its design as a pocket-size manicure set make it an attractive and reasonable gift. All seven sets are aimed to be not only giftlike but efficient and workmanlike as well.

**4** A zippered travelling case of top-grain leather, with hand-turned edges, saddle stitched for beauty, is used to package seven Primrose House products for gifting the young feminine traveller. The case comes in four colors—black, tan, cherry, and British tan—is waterproof, oil-skinned lined with a separate pocket for comb, mirror and other odds and ends. Case, Firman Leather Goods Co., New York.

**5** These emergency rations for use on life rafts, manufactured by Charm Co., are packed in cans similar in appearance to the familiar sardine can. The scientific rations add up to five courses of food in a highly concentrated form. In the package are five sucrose-citric acid tablets; ten sucrose-lipid-citric acid tablets; eight sucrose-malted milk tablets; two multi-vitamin tablets; two chewing gum tablets all wrapped in protective films, plus a waterproof bag to protect the rations after the can is opened. Can, American Can Co., New York.

**6** "Party Bits" baked by U. S. Cookies, Inc., Brooklyn, N. Y., can be seen now on the retail shelves of better stores in this new carton. Two-thirds of the box is covered with an appetizing full-color illustration of the cookies within. The party atmosphere is carried out by means of the lace trim effect which runs around the bottom of the reproduction. Carton, Eastern States Carton Division of Robert Gair Co., Inc., New York.

**7** Full-color printed, heat-sealing cellophane covers the folding carton for Cascades Frozen Foods new "Agen" packages. Rotogravure printing on the reverse side of the wrapper allows the cellophane to enhance the sparkle of the inks. The wraps, printed in continuous rolls, are intended for use with an automatic wrapping machine. Wrap, Milprint, Inc., Milwaukee, Wis.

**8** A new label which handles the two-language directions-for-use problem without the usual confusion is this one for the U. S. Conserve Co.'s Blue Star Gefilte Fish. Yellow, red and blue are combined to set off the full color reproduction of the product while a white panel on the back of the can gives the two language suggestions for serving. Labels, Muirson Label Co., Peoria, Ill. Cans, Crown Can Co., Philadelphia.

(Page 103)

# Thank you, Mr. Tojo

**we study Jap ration packages and find them sadly lacking**

When the Japs fled before our advancing forces in the South Pacific, they were in such a hurry that they left a lot of things behind without wasting time to destroy them.

Among the captured were quantities of wooden shipping cases made of ill-assorted pieces of scrap lumber, apparently, and put together with odd sizes and kinds of nails, some of which had evidently been used before.[1] After the proper precautions were observed to make sure these cases were not booby traps, they were opened to permit an inspection of the contents. Inside the wooden case was a heavy but flexible tin-coated metal inner liner, soldered at the joints. The contents turned out to be field rations in unit packages, 72 to the container, of two very different types.

One of these was a packet, almost cubical in shape, wrapped in a manner to resemble a package of old-fashioned fire crackers and imprinted with what to the average American is a meaningless collection of hieroglyphics. Curiosity got the better of the MODERN PACKAGING staff—and the Rev. A. S. Akamatsu, pastor of New York's Japanese Methodist Church, made the translations and furnished information about the contents, which we think will be of interest.

[1] We have no monopoly on conservation and re-use!

1

Inside this packet are several smaller packages containing four different types of food material in dehydrated and/or compressed form, each in its own packaging material. One of these is a compressed whole wheat meal cake, which the legend designates as the "main food." Another little package contains "dempu," which is a compressed powdered fish cake with soy sauce. Tablets of compressed powdered sugar are in a third wrapper and the fourth package contains compressed pickled prune.

The labeling on the external wrapper lists these four component parts of the ration and, in addition, gives "directions for eating." The compressed cereal cake, these directions say, may be eaten as it is, or it may be soaked in hot water, tea or cold water, which will give it the consistency of cooked rice. The "dempu," or "side food," may be eaten as it is or may be sprinkled over the main food. "For the use of patient," these directions add, the main food should be crumbled up so that when boiling water is poured over it, the consistency becomes gruel-like. Milk, the directions continue, is better for this purpose than boiling water.

The compressed pickled prune, Mr. Akamatsu says, is a very well-known item in the Japanese diet. Its function is to stimulate the salivary glands and thus in a measure compensate for the lack of water or other moisture in the food. The substance is very sour and the very thought of it, so runs an old Japanese saying, is enough to satisfy thirst. (Editor's Note: We tried some—it certainly works!) When water or milk is unavailable, the Jap soldier munches on his "main food," wets it up with his own whistle through the use of a bit of pickled prune, tops it off with a sprinkling of "dempu," and for dessert chews a tablet of compressed sugar. Alto-

2

*1—Complete field ration, wrapped for delivery to Nipponese warriers.* **2***—(1) Outer wrap bears full directions. (2) Inner wrap. (3) Wrapped packets of compressed cereal are not sealed (4 and 5) in any way. (6) Compressed sugar tablets are loose wrapped. (7) "Dempu" (Compressed fish cake with soy) and pickled prune—latter is for "salivation."*

gether, these four little packages make up what the Japs, in their quaint way, may consider a delicious and appetizing meal. (We'd prefer Ration "K," thank you.)

The other type of field ration bulks a little larger. The outer wrap is a transparent film, sealed with a simple adhesive, tied at the ends with string. Inside are two paper sacks, tied with string, and four flat packets. Each of the paper sacks contains about 6 oz. of "mochi," which, we are told, is rice powder or essence of pounded rice cake. This type is stickier than the ordinary type of rice probably because it contains more starch. The soldier is directed to put this flour or powder in a suitable container and add either hot or cold water "of the weight less by 1% than the weight of this." The equipment for such accurate measuring of water is not provided with the ration.

The flat packets—four of them—contain a cake of dried shrimp with which is mixed a type of edible seaweed; the latter ingredient, as is well known, is an excellent natural source of iodine. The odor of this substance, to Occidental nostrils at least, is anything but alluringly appetizing. Without a doubt, however, it is quite a delicacy in the Antipodes. The printed directions assure the expectant epicure that "when a small quantity of water is added and boiled well, the original condition may be easily achieved."

To anyone in the packaging field, the materials used for wrapping and sealing these products are of considerable interest. Accordingly, the following analysis was made for us by the Research Department of the Riegel Paper Co.:

The outer wrap of the cube-shaped package is a lamination of creped asphalt $32^1/_2 \times 80 \times 32^1/_2$. That is, two sheets of $32^1/_2$ lb. basis weight paper with an 80 lb. basis weight asphalt. The paper contains 60% of bleached sulphite and 40% of an unknown bleached fibre. This last fibre is long and narrow, but wider than jute or groundwood. There are many short and broken particles, which may indicate the use of a large amount of waste. This packet is sealed with a tape made of 100 %unbleached sulphite, and an inner wrapper, which lines the package completely, is of the same kind of material, sometimes designated as "M.G. Bag Paper."

The smaller units inside this larger packet all have individual wraps except the pink-colored pickled prune. The oat cake or compressed cereal is in a 100% bleached sulphite of good long fibre. The powdered sugar cake unbleached sulphite wrapper has a trace of Bast fibre. Super-calendered 100% bleached sulphite, not greaseproofed, forms the inner wrap for the "dempu"—fish cakes and soy sauce—and an outer wrap, containing two of these cakes in their inner wraps, is a pink material which tests 10% bleached sulphite and 90% unbleached Bast fibre.

The outer transparent wrap of the larger package is a regenerated cellulose material, non-moistureproof, coated with a non-heat-sealing cellulose nitrate base coating. This film showed unusual variations in thickness, gauging from 0.0014 to 0.0020 in.

The paper sacks of "mochi" are of 100% unbleached kraft with a trace of hemp fibre, approximately 30 lb. basis weight. The dried shrimp and seaweed concoction is double-wrapped. The inner wrap is of dry waxed sulphite of 20 lb. basis, waxed to a 24 lb. basis. This type of paper is not heat-sealable, and has very little moisture-vapor resistance value. The outer wrap is an unbleached kraft.

Paper making is supposed to have originated in the Orient. Careful analysis of these particular materials, developed in Japan, discloses that there is little of value to be absorbed from that source when it comes to special papers for package purposes. Indeed, the observer (*Continued on page 164*)

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**3**—*This bulky and fragile package, which contains rice powder and dried shrimp cakes, has an outer cellulose wrap sealed with a simple adhesive and tied by hand with string.* **4**—*(1) Outer cellulose wrap. (2) Kraft sack containing the rice flour, (3) shown open; (4 and 5) packets of dried shrimp and an edible type of seaweed with a powerful scent.*

# DISPLAY GALLERY

1

**1** To save the time of busy wartime salesclerks, Johnson & Johnson has evolved this novel "serve yourself" display for its Red Cross Plaster. Recessed in the back-drop, under the name of the product, is a sample of the plaster itself. The inclined shelf at the bottom of the display holds the plasters, prepackaged, ready to be picked up and paid for by the customer. The display is intended for a prominent counter space near the register. Display, Sweeney Lithograph Co., Belleville, N. J.

**2** The Upjohn Co. again honors the family physician by repeating the Norman Rockwell painting of a typical American family group in a characteristic doctor's office. This is the same painting which won such favorable comment from professional men and laymen alike several years ago—only this time the pictorial is in a larger and more dominant size. Actual packaged products can be placed in designated spots on the shelf in the center. Side wings and separate side cards carry descriptive presentations of the products and photographs lithographed in full color. After serving as a window piece the display is suggested for use in the prescription department. Display, Forbes Lithograph Mfg. Co., Boston.

**3** Here's a permanent display-selling case made entirely of wood with the exception of a glass face and glass shelves. The large "1" on the face is lacquered in bright red; the walls of the cabinet are of yellow and the name plate at the base of the unit is dark blue with white lettering. The face glass, itself, is silk-screened in white and red. Shelves allow sufficient space to hold a selling stock of all the sizes and kinds of One-A-Day vitamins. Display, Harve Ferrill & Co., Chicago.

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**4** An exact replica of their 24 sheet highway poster in miniature is used by Jelke's to make the shippig carton for "Good Luck" margarine into an effective counter display. The idea behind this is to carry the same design from the highway to the window in the form of streamers, and right on to the counter in the form of easel mounted cards. It is finally carried directly to the package by means of the card shown. The miniatures of the triple-duty poster design carry white space for the local retail selling price. Displays, U. S. Printing and Lithograph Co., Erie, Penna.

**5** A semi-permanent paperboard counter display lithographed in two colors is used by E. Fougera & Co., Inc., for its deluxe size Don Juan lipstick. The base of the piece, which gives the appearance of being a square of wood, has a slightly elevated platform which is die cut to hold six lipsticks in an upright position. Thus, the six different shades are right at hand for customer inspection. The product has been advertised widely over the air and in national publications and, therefore, it was felt that a display of this type was needed to round out the selling campaign. Display, Dependable Printing Co., N. Y.

**6** Chesterfield presents this paper cigarette girl as one in a series of motion displays which are being keyed to various cities all over the United States. This particular one carries "In New York it's Chesterfield" on its streamer. Each city, naturally, is provided with its own streamer. Made completely of paper, the figure is held in an upright position by means of the machinery at the back—a small electric motor which works the mechanism whereby the figure moves her arm, head and whole body from the waist up. Her dress is black, varnished to resemble patent leather, her rose a brilliant red and the rest of her as nearly natural colors as possible. Display, Ridgefield Mfg. Corp., Ridgefield, N. J.

**7** Wyeth's Collyrium eye-lotion to "Refresh Tired Eyes" offers a paper-board easel-type display to its retailers which has fastened to it an actual bottle of the product complete with plastic eye-cup closure. The display can be used either as a window-piece in conjunction with other Wyeth products or as a counter display inside the store. It is offered free to retailers. Display, Zerbo Co., New York City.

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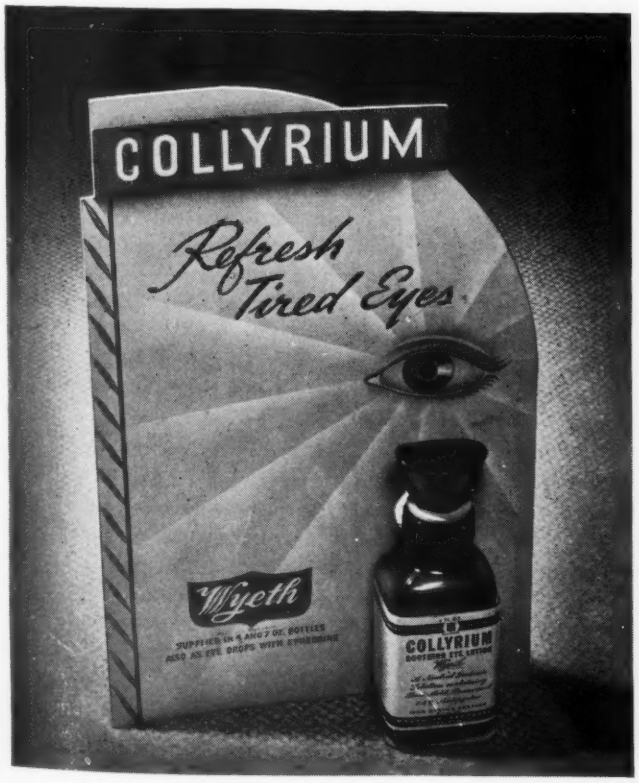

ATLANTIC OVERSEAS AIR SERVICE COMMAND PHOTO

*1—P-47 fighter processed ready for deck shipment, with all openings closed and taped and plane coated over-all with sprayed plastic coating.*

# Planes in envelopes . . . applied by a spray gun

When 750 fighter planes ride out with 750 American bombers on a mission over Germany, the heartening report that comes back often is: "None of our aircraft is missing."

This superb fighter cover, and the incidental destruction of the German Luftwaffe, could hardly have been achieved so early in the war without the development of a new packaging method—a method which permits fighter planes almost fully assembled to be shipped on the open decks of freighters, ready to go into action shortly after their arrival in Britain.

The planes are coated with a vinyl plastic solution, shot from spray guns like paint, which hardens in less than half an hour into a tough, rubbery coating that hermetically seals the entire plane. The protective film, about .015 in. in thickness, is immune from the attacks of heat, cold, sleet or salt water, and will not break or crack regardless of distortion and vibration to which the plane may be subjected. It strips off clean in big sheets, leaving a painted surface as immaculate as the day it left the factory.

Rapid delivery of bomber planes to the fighting front is no problem. They are flown from the factory to England in a matter of hours, without the necessity for any packaging protection. Shorter-range fighter planes, however, must be delivered by ship.

At first our fighters were dis-assembled and crated for below-decks stowage in freighters, and some interesting protection and crating methods were developed.[1] Some of the firms which engineered these crating methods—Aviation Packaging Corp., Dade Bros., Inc., Better Finishes & Coatings, Inc.—helped to develop and are now using the plastic spray coating.

Crating at best was a slow business, requiring hundreds of man-hours for dis-assembly, crating and—at the other end of the line—uncrating and re-assembly. It was a severe strain on materials, facilities and manpower. Furthermore, the huge crates consumed an enormous amount of hold space in cargo ships which was badly needed for other war matériel.

The first step toward speedier packaging and shipping was to devise a way in which assembled planes could be lashed to freighters and tankers as deck loads. This would save the time consumed in dis-assembling and re-assembling, and it would also greatly relieve below-decks cargo space. But it was recognized that great care would have to be taken to protect the surfaces of the planes from corrosion during a sea voyage sometimes lasting as long as two months.

The first protective coating tried was a grease with a lead base, which was simply sprayed over the plane after openings had been sealed or taped up. This was not entirely satisfactory. The grease could be rubbed off in spots during handling, and it might be washed off if waves broke over the deck. If it remained intact, the coating was fairly effective from a waterproofing standpoint, but it possessed almost no resistance to moisture-vapor penetration. On a long voyage the grease-coating had a tendency to harden and then develop shrinkage cracks. In extreme heat it would melt and run off. But its biggest objection was the fact that it required 10 men, two days and 80 gallons of gasoline to remove the grease coating at the debarkation point and clean the ship up ready to fly.

Experiments with the plastic spray coating were started many months ago, and hundreds of different formulas were tried. The big problem was to get a material which would have physical strength with just the proper amount of adhesion—that would stick firmly to the plane surface during shipment and yet come away clean and easily on removal without the use of solvents. The latter is a ticklish question, and there is still some difficulty in maintaining controlled production of approved materials.

Currently, the material being used by the Atlantic Overseas Air Service Command at Newark Army Air Field is Liquid Envelope, supplied by Better Finishes & Coatings, Inc. The solution is described as being composed of a vinyl copolymer resin, stabilizer and plasticizer. Experience shows that it will maintain adequate protection in a range from −40 deg. F. to +180. The latter temperature is sometimes experienced on the ship en route to India.

Fighter planes destined for shipment from the New York area are flown from their factories to the Newark Army Air Field, arriving in large numbers daily. Spray coating goes on continuously in the big hangars. Only in the case of very

[1] "Crating Airplanes," MODERN PACKAGING, April 1943, p. 166; "Experience Shipping Planes," MODERN PACKAGING, October 1943, p. 65.

wet weather or severe cold is it necessary to suspend operations.

An airplane can be completely processed with the plastic material by two men with spray guns in less than an hour. Experience teaches the operators the proper rate at which to move the spray to produce a coating of the desired thickness. Extra thickness above the required .015 in. does no harm; it is merely a waste of material. On arrival of the plane overseas, three or four soldiers can slit the coating and peel it off in about an hour.

When a plane comes in for processing at Newark, the first step is to remove the propeller or propellers, which are crated and stowed under the plane aboard ship. Other protruding equipment also is removed. The engine nacelle is covered with a plywood fillet which is taped and sealed around the edges. Gun muzzles and all other openings are closed, taped and sealed, and tape is run along the joining edges of skin panels throughout the wing and fuselage. The plane is then ready for its plastic coat—a single, seamless envelope which encloses and seals the entire plane, drawing up snugly as it dries. The average fighter plane requires about 20 gallons of the coating solution.

Current practice is to apply four thin coats, alternating yellow, dark gray, yellow and finally dark gray. The drab dark gray color provides excellent camouflage for above-deck loading, in harmony with the customary battleship gray of the ships. The four coats fuse into a single .015-in. coating, which is sufficiently elastic to flex with any movement of the plane and will not harden or become brittle in exposure to sun, wind or cold. Despite its excellent adhesion to both bare and painted metal surfaces during transit, the coating will not pull or lift the paint when it is stripped.

An outstanding characteristic of the coating is its low moisture-vapor transmission rate. In tests by an independent laboratory, in accordance with Navy Specification ANC-67, a film approximately .003 in. thick, formed by two sprayed coats of Dade Bros.' formula, transmitted only 0.47 gram of moisture per 100 sq. in. per 24 hrs. A film approximately .0045 in. thick, formed by three sprayed coats, transmitted only 0.29 gram of moisture per 100 sq. in. per 24 hrs. A recent modification of the formula possesses an MVT rate of 0.18 gram for a .006-in. thickness, tested under the same conditions.

Sprays currently being used are applied cold at room temperature. The Army and packagers, however, are experimenting with a hot spray method which is expected to be perfected soon, with definite advantages. The hot spray will make it possible to work in damp and cold weather, and because it contains more solids, may be applied in one coat instead of four. With a coating averaging .025 in., the hot spray would give protection from about −65 deg. F. to +240.

Another advantage of the hot spray method is the fact that the material is thick enough to bridge small gaps, and therefore taping of seams is eliminated to the extent of about 65%. With this method, even the present short time required for packaging a plane will be drastically reduced.

Technicians of Better Finishes & Coatings report that tests show the hot spray material (*Continued on page 162*)

PHOTOS 2, 3 AND 4 COURTESY DADE BROS., INC.

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***2—Tough elastic coating strips off readily, leaving a clean surface, ready to fly. Film is about .015 in. thick. 3—Stepladder and spray gun are only equipment required for this effective kind of packaging. 4—Typical deck-load of packaged planes. Each of these planes will be ready to fly within a few hours of arrival overseas.***

# The Aldens Family co-ordinates name and package

*by Edythe Bright**

**1**—*Evolution of the Aldens prefix to predominance over Chicago Mail Order Co. name is illustrated here in three successive catalogs. The one at right shows Aldens in small type; left, the name is predominant.*

Decision of the Chicago Mail Order Co. to change customer impression of the name of this long-established firm was made only after careful consideration. When a company deals with its customers only by mail, the matter of name recognition is perhaps even more important than in the case of a retail store. Once the decision has been made, however, the time appeared opportune for a complete housewide co-ordination of packaging presentations, brand names, labels, tickets and tags. Despite wartime difficulties, the program is being successfully carried out.

The company has become "Aldens Chicago Mail Order Co." to its customers. The "Aldens" prefix was first introduced in a subordinate way in 1939; gradually the "Aldens" was given greater and greater prominence until it became predominant, and today the words "Aldens" or "Alden House" alone are considered sufficient branding for packaged merchandise.

Objective of the name change was to provide a friendly, personalized "handle" for our long name. "Aldens" was chosen because the name was already known to our customers. "Henry W. Alden" had been a house personality for more than 29 years. "Jane Alden," our stylist and personal style advisor for thousands of customers who met her at 4-H and other public events, had helped to build the Aldens name. Our own promotion of Alden House fashions had built further emphasis and acceptance for "Aldens."

There was the delicate problem of maintaining customer relationships through the complete "Aldenizing" period. The house certainly did not want to jeopardize the friendliness and faith that customers had shown for more than 50 years. The job was to make the customer realize that Aldens Chicago Mail Order Co. was the same friendly place they had always known—that only the name was different.

In 1939, the name "Aldens Chicago Mail Order Co." was printed on order blanks and return envelopes sent with the January flyer to all customers in Utah. Customers were advised of the program with a special letter and tip-on. Results of this mailing were so successful that the house was encouraged to move ahead with the program. On later catalogs, the signature was used on the cover, body pages and editorial pages. Other states were added. By spring, 1943, all Western Division states, Texas excepted, were being treated as "Aldens." At this stage, Aldens was still typographically subordinate to Chicago Mail Order Co., but it was there. The first catalog carrying the Aldens name on a national basis was the 1943 fall book. In the last three catalog issues, the program has been accelerated very rapidly, so that the new 1944 fall book carries "Aldens" in the dominant position.

The Name Co-ordination Office, charged with the responsibility of carrying out the Aldenization work and a complete co-ordination job, came into being in the summer of 1943. A complete plan of operation carrying full recommendations for the Aldenizing and co-ordinating of brand names, labels, tickets, tags and packaging presentation was presented to the management in September, 1943, and was approved.

In the field of packaging *per se*, adoption of the co-ordination program split packaging responsibility in the house. The Name Co-ordination Office was made responsible for the presentation aspect. The Package Engineer's Department, under direction of R. E. Farney, was, as always, responsible for the protection side of Aldens packaging. This has proved to be an ideal arrangement for Aldens. The two departments work in closest cooperation. The Package Engineer establishes all structural data, which is then turned over to the Name Co-ordination Office for design.

Beyond the accomplishment of the Aldenizing program, the

*Name Co-Ordinator, Aldens Chicago Mail Order Co., Chicago, Ill.

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broader objective of the plan was to gain greater consumer acceptance and build prestige for the house and its merchandise through the co-ordination activities.

An official house color—"Aldens Spice"—was adopted. It was selected because its lively spice brown tone is a "friendly" color. Yet it is a color which serves usefully and attractively, with the practical advantage of not showing soil readily.

An official house "logo" was adopted. In working up this design, our typography experts sought to develop a simple, legible handling which would not become quickly dated. A secondary objective was a design interpretation which would connote high style and quality. A third objective was to develop a logo with the Aldens Chicago Mail Order Co. presented in such a way that the primary accent would be on the new "Aldens" handle.

The laurel leaf handling was adopted because laurel decor has been a representative mark of distinction since the days when the ancient Greeks first used laurel foliage to crown the victors in the Pythian games.

In working out the logo, it was agreed that use of the full handling with the laurel leaves should be flexible. Certain labels and package designs would be better without it. This was particularly true when it came to interpreting the new handling in the design of shoe boxes. The women's and misses' boxes were designed with depiction of the full logo. The men's boxes were designed with a more masculine version of the script, sans laurel, but both packages are in the official spice brown. Authorized "Aldens" script and the Futura type face for "Chicago Mail Order Co." were made mandatory.

The changeover to general use of the Aldens spice color and depiction of the authorized logo has been accomplished within the short span of three seasons. All packages are Aldenized today. Naturally, it has been necessary to make some compromises. For instance, postwar we plan on Aldens spice kraft bags. Today, we are using natural kraft with the house logo in spice. But every new bag in the house is printed in the Aldens motif.

The brand name program, now under way, is a long-range plan. We are aiming at complete and rigid specifications for all individual brand names. General line names are not being overlooked, either. Specifications are the rule. They are developed cooperatively by the division, the Quality Standards Department, the Laboratory, and the sources. Specifications must be approved by the General Merchandise Manager before adoption. All brand names are Aldenized; i.e., on merchandise labeling the name is preceded by Aldens.

Previous to the establishment of the Name Co-ordination

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**2**—*This is official Aldens logotype, but it is used flexibly according to character of merchandise.* **3**—*Comparison of old (left) and new in men's and women's shoe boxes. Note masculine treatment of new logo for men's boxes.* **4**—*New treatment is universal. Here is a comparison of old style corset box (left) and new; old kraft bag and new.* **5**—*Even garment labels have been "Aldenized." The old style labels are shown at left; new labels at right.*

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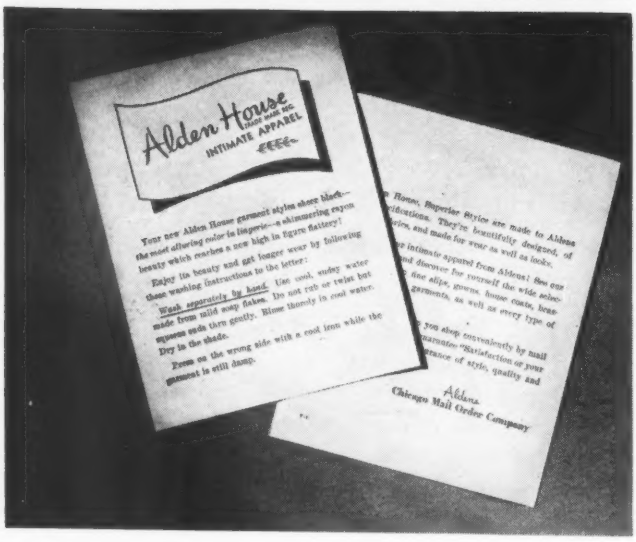
Alden House
INTIMATE APPAREL
Your new Alden House garment styles show black—
Enjoy its beauty and get longer wear by following
these washing instructions to the letter:
Wash separately by hand.
Dry in the shade.
Press on the wrong side with a cool iron while the
garment is still damp.
Aldens
Chicago Mail Order Company

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Office, Labels—design, type, and usage—were pretty much left to the discretion of the division concerned. An obvious lack of continuity and co-ordination was the result. Today, the divisions describe full specifications of the merchandise and all label and tag requirements at the time they contact the Name Co-ordination Office regarding establishment of a brand name. All design work for labels, tickets and tags is co-ordinated at this time.

The house is deeply interested in informative labeling. The postwar program will include broad informative labeling developments. Even in today's difficult merchandising operations, some progress has been made in the co-ordination of lines like sheets and sheetings. Because label colors are in contrasting tones, it is possible to distinguish different quality merchandise at a glance. Yet, the major Aldens logo theme is retained in the design. The copy story speaks for itself. Aldens postwar retail customers will readily see what quality features are built into each brand and price point.

The development of Aldens "Tell Tag" program has been interesting. It is by no means original with Aldens. In recent years, alert merchandisers both in the manufacturing and retail fields have become increasingly aware of the value of factual tags. The name "Aldens Tell Tag" was created at Aldens, however, and is fully protected legally.

The first tags were, of necessity, general in their copy slant. In the operation of a mail-order business, with no chance of the personal contact available in retail merchandising, correct tagging with information as to care and upkeep is of vital importance.

It was originally decided there would be two types of Aldens Tell Tags—one blue on blue for washable merchandise—the second Aldens spice on ivory for dry-cleanable merchandise.

The Aldenization theme was specially interpreted for the design of the tag itself. Also, since cost of merchandise does control expenditure for labels, it was decided to carry further brand-name identity to Aldens customers through reproduction of cloth label designs on the reverse side of the tag. Thus, whether or not the garment carries a textile label, the customer is again reminded, "This is an Alden House, Superior Style," when she reads the Tell Tag advising how to care for the merchandise.

More recently, as conditions have permitted, we have adopted specification Tell Tags, like the Aldens W-110 shoe tag. There will always be a need for general-line tags and Aldens will continue to use them. But the major postwar tag objective is to establish specification tags for all lines. Aldens believes this type of tag is of greatest merchandising value to the consumer.

The same philosophy which has permeated Aldens packaging, brand name, label and tag programs has influenced merchandise insert developments. The objective is to carry the Aldenization technique throughout.

There are three types of inserts. The first is the specialized "how to take care" insert for indi- (*Continued on page 166*)

***6**—Informative sheet labeling in the Aldens manner; new labels are at right.* ***7**—"Tell Tags" is copyrighted name for new descriptive tag labels—doubly important for a mail-order house. Note contrast with old tags at left.* ***8**—Interesting graphic treatment of shoe tag; front and back panels shown.* ***9**—Inserts serve purpose of personal suggestion selling for mail-order house. This one, for sheer black nightwear, is angled for feminine appeal.*

# PACKAGING INSTITUTE

## *Annual Conference—November 1-2*

EACH year the annual meeting of the Packaging Institute, bringing together those interested in the technical aspects of package production, machinery and supplies, gets bigger and better. The 1944 conference, November 1 and 2 in New York, attracted more than 800 registrants, as against the previous high of 500 set in 1943.

It was a remarkable indication of the growth of interest in the purely functional aspects of packaging. The seating capacity of the Hotel New Yorker's big ballroom was exhausted and many registrants stood for as long as two hours to hear technical papers and discussions between packagers and suppliers as to what is wanted and what is forthcoming in the way of equipment and materials.

Keyed to the theme, "Planning for Reconversion," the four main convention sessions were extremely well organized around the general topics of package production and package manufacture planning, basic materials, production requirements and technical questions.

Speakers were recognized authorities in their fields and following their prepared papers they engaged in question-and-answer exchanges which brought forth additional significant points.

Registrants took time out for a get-together luncheon on the first day and for the annual banquet in the evening. The banquet speaker was Dilman M. K. Smith, vice president of the Opinion Research Corp., who pointed out trends in public opinion which he interpreted as encouraging to free enterprise.

The meeting marked the retirement of Joel Y. Lund, vice president of the Lambert Pharmacal Co., as president of the Packaging Institute, after two successful terms. The new president is Walton D. Lynch, vice president of the National Folding Box Co. W. O. Brewer, of the Calco Chemical Division, American Cyanamid Co., and George A. Mohlman, president of the Package Machinery Co., will serve as vice presidents.

The Packaging Machinery Manufacturers' Institute held its annual meeting concurrently and elected as president Frank B. Fairbanks, president of the Horix Manufacturing Co., with H. Lyle Greene, of the J. L. Ferguson Co., and Mr. Mohlman as vice presidents. Elected directors in this division to fill expired terms were Harry A. Miller, secretary and general manager of the Burt Machine Co.; Oscar W. Wikstrom, president of the U. S. Automatic Box Machinery Co., and Boyd H. Redner, of the Battle Creek Bread Wrapping Machine Co.

New chairman of the Production Division is Mr. Brewer. Named directors were Lloyd I. Volckening, president of the Ivers-Lee Co., and Dr. J. H. Wallace, Jr., vice president of Carter Products, Inc.

The Supplies Division elected F. S. Leinbach, of the Riegel Paper Corp., as chairman, and added J. S. Algeo, vice president of the Hazel-Atlas Glass Co., and M. T. Rogers, manager of the Packaging Division, the Dewey & Almy Chemical Co., as directors.

Credit for the excellent conference program goes to Mr. Leinbach, chairman, and the 12 members of his program committee, assisted by Miss Helen L. Stratton, secretary of the Institute.

The conference summary which follows is taken from the official transcript, edited and condensed for easier reading. It will be a valuable reference work for all packaging people, including those who were fortunate enough to have attended the sessions:

WEDNESDAY MORNING, November 1

*Chairman:* DAVID S. HOPPING, *Director of Sales Development, Celanese-Celluloid Corp.*

### PACKAGING AND COMPANY WELFARE

JOEL Y. LUND, *Vice-President, Lambert Pharmacal Co., and President, Packaging Institute.*

It has been so long since we left the days of the cracker barrel and the pickle barrel, that many of us take packaging as a matter of course.

I wonder how many companies have really considered the various phases that packaging has gone through and consequently to where it is likely to progress. It would be well for every such company to take stock periodically.

The problems and the importance of the solution of those problems change just as much as the styles and designs of automobiles change, and the company that doesn't keep up with these changes is just as likely to suffer the unfortunate results as the automobile company that is trying to stay in business producing a model two years old.

Packaging should not be just a matter of casual interest. It should be given its just place in the company organization and adequately staffed with competent people, both from the standpoint of merchandising and proper protection.

The purpose of the Packaging Institute is to help companies keep in touch with the technical developments of packaging that will mean the solution of these problems. An added side is the study and establishment of standards of methods of testing to predetermine whether or not the desired results will be attained.

I know that you will find our program this year to be interesting and helpful. The subjects are those that you, yourselves, have suggested and I am sure you will agree that Fritz Leinbach, and the Program Committee, have done a grand job in coordinating the suggestions and obtaining the very top authorities to discuss the various problems. We expect that

this meeting will be the largest and most widely attended that we have held. With this sort of continuing cooperation, the Institute will continue to go forward with increasing value to its members each year.

## PACKAGE PRODUCTION PLANNING

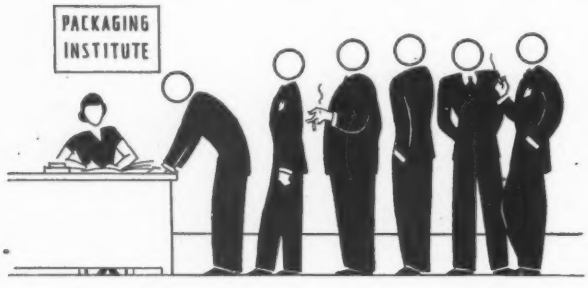
C. O. KENDALL, *Manager of Packaging Development, E. R. Squibb & Sons.*

Although there are no perfect packages there are many good examples of perfect package planning. Such plans begin with the conception of the dream package which is considered to have: Perfect sales appeal, display value and utility. Perfect product protection. Ideal production simplicity. The lowest possible cost.

In the development from this point forward, compromise becomes a very necessary part of Package Planning. To exaggerate slightly, it is usually arrived at with the following as factors:

To sales, the perfect package is that which will outsell all competition. It is usually the most expensive of the alternate ideas proposed but this cost factor should miraculously not be reflected in the selling price of the product. It carries a design which will be constantly fresh and in step with the changing trend of the years but this is to be accomplished without changing the package appearance. Some people will like the old design.

To the department responsible solely for the product,




the ideal package is one which is sterile upon receipt, chemically inert, hermetically sealed, with unbelievable strength features, zero moisture-vapor transmission values and all qualities which make it impervious to extreme icebox or oven conditions.

To production, the ultimately satisfactory package is one which will possess a mind of its own capable of effecting a physical adjustment to the eccentricities of weather, men and machines.

To purchasing, perfect specifications are those which define an item immediately obtainable from the perfect source of supply — a source which they have pre-determined.

The legal department usually has requirements which could only be met by a container which would collapse to minute size when viewed from the standpoint of outage and expand to billboard proportions when inspected for type size and amount of copy carried.

With these as factors, the package plan becomes a compromise which is successful to the degree that the solid fact behind its conception and development convinces each conflicting viewpoint of the rightness of compromise. The planner's job is one of conception and development through modifying coordination.

In our company, we start package planning with the factors required for product stability and protection and proceed to Sales (utility and distribution factors) and thence to Production and Purchasing. The weight of any necessary compromise falls upon Production and Purchasing.

From the standpoint of Production and Purchasing, the "white hope" of the future lies in simplification and standardization. The problem is one of a vast number of products packaged for sound utility reasons in everything from capillary tubes to 55 gallon drums. Both product and package are subject to continuous change resulting from research and progressive development. This requirement can only be met when packages and packaging lines are designed for flexibility. Flexibility with maximum efficiency is only another way of stating the process of standardization.

Prior to the war, over 70% of our products were packaged in glass bottles, vials or ampules, with the remainder in tins, aluminum canisters, collapsible tubes, plastic vials, unit wraps in transparent sheeting and folding and set-up boxes. Very few wartime changes will be retained.

Looking to the future, glass will undoubtedly remain our major packaging medium. This follows from the fact that we package primarily for product stability and nothing yet equals glass in this field. We will want improved closures, and the help of the glass and closure people in the development of fewer finish sizes and closure liners with more universal application for our products. Nineteen closure sizes and 15 liner materials, geometrically adds up to a production headache for us and for our suppliers.

Our export managers pray for an improved closure to meet the handling, temperature and humidity conditions in their markets. Such, we believe, will be developed although to date we have seen no 100% answer. The export field generally will be large and invites the development of new packages with greater product protection and lighter weight. The newer materials in unit wrapped form as primary packages and the plywood — plastic — fibreboard laminates as shippers are promising developments.

We need a better way to keep bottle labels dust and smudge free on the dealers shelves and in the user's possession.

We look for many new developments in plastics but will proceed cautiously because of product stability. Our need here is for samples for testing and more technical information.

QUESTION: Will a substitute collapsible tube eventually replace the extruded metal tube?

MR. KENDALL: That one is almost as bad as one I feared might come, which is whether salt and water was as good as toothpaste. (Laughter)

If others in the audience had had my experience, and my experience would be very limited, compared, for example, to Mr. Lund's, I think it would be safe to say that nine out of ten dentists in the country have invented a collapsible tube in the last three years. They range from everything resembling a bag and there was a time when we might have had to use bags, to things that Rube Goldberg would look at with amazement.

I am guilty of having been one of those in the beginning, strongly convinced that a substitute tube would be obtainable. I am now convinced that nothing yet has been seen, and I very much doubt if there will be a substitute with advantages over the metal extruded tube.

QUESTION: I have heard that a plastic ampule has been used in England. What are its advantages? Is there a market for it in the United States if it can be developed?

MR. KENDALL: There will be a very large market for such an ampule, in my opinion, although it would be a gradual development. The largest problem undoubtedly lies in product stability. We are entering a phase in which we will have many products in the drug industry that require the protection of an ampule, but must be used by the individual housewife, not by the doctor as the ampule is used. We cannot afford to package such products in glass ampules because the housewife will undoubtedly cut herself if she tries to open it.

The first advantage, then, I would say, would be that an ampule made of plastic could be cut off with a pair of scissors and opened very easily and yet it would have thorough protection if the plastic employed gave that protection.

## PACKAGE MANUFACTURE PLANNING

P. M. GILFILLAN, *Vice President and General Manager, Shellmar Products Co.*

The flat, bald statement that "prewar packaging emphasizes attractiveness" may bring protests from some members of the audience. We realize that many of you were deeply concerned with the functional protection of packages as well as appearance, but, at the same time, there were thousands buying and using packages for appearance only, when tested protection was badly needed. You will notice the use of the phrase "tested protection," while we have all functions to consider, such as waterproofness, greaseproofness, physical strength, etc. Let us take as an example the phrase "tested protection" as it applies to moisture-vapor transmission. In prewar days the woods were full of salesmen with samples of flexible packaging materials, identified as "moistureproof." Many of you who were crusading for a common language with which to express a degree of permeability or moistureproofness, no doubt asked, "How moistureproof?" Remember some of the ridiculous answers? I remember one such salesman answering me, "I don't know how moistureproof it is, but, Brother, it's terrific." When our Laboratory checked these particular "terrific" samples, we found the M.V.T.R. well over two grams per 100 sq. in.

At the out-break of the war the various branches of the service were flooded with this same type of information and samples of materials, but fortunately for the future of the packaging industry, Government Specifications entered into the picture. I should add, "properly written Government Specifications."

While some branches of the service originally felt that a given result could be accomplished by specifying types of materials to be used, they soon found out that production technique in different plants resulted in wide variations in moisture-vapor transmission rates.

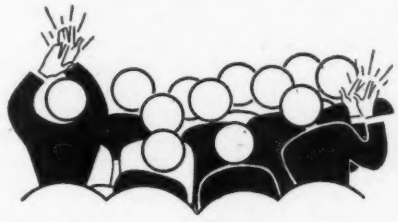
The Air Corps acted as the "bell-wether" by establishing not only an approved list of materials, based on their own tests on the General Foods type testing equipment, but an approved list of suppliers as well. This procedure has since been followed by other branches of the service.

The creation of an approved list of suppliers or package fabricators had great significance. It put the spotlight on the fact that protection of merchandise can only be finally measured through the testing of the finished package. By writing performance requirements into Specs., Government Agencies put over in approximately a year what some of us had been attempting to establish over a period of many years, with very little progress to show for our efforts.

One of the most interesting results of this demand for tested protection by the Armed Forces was an overnight house cleaning in the field of "moistureproof" materials. The establishment of the 0.25 or the quarter of a gram moisture transmission of a 100 sq. in. in 24 hours, as a test for a flat membrane, plus the requirements that the finished package stand similar tests, automatically removed over 95% of the so-called moistureproof barriers from the available list. Suppliers of flexible packaging materials were forced to change their tactics from that of an offensive, planned through the sales department, to that of a defensive program, planned through the laboratory.

As a result of all this concentration the supply of tested and approved moisture barriers has finally exceeded the demand of the Armed Services.

The next question is "What shall our goal be postwar?" The challenge which faces the packaging industry is how to prevent a complete return to the old sales tactics and techniques just because Government Specifications no longer dictate that protection must be tested and certified. How to bring beauty of design back to packages without allowing it to dominate is one of our problems. Since the buyers of our



materials and packages are contacted almost exclusively by our sales forces, management has an extremely important training job to do if we are to hold any of the gains which have been made in the use of performance standards.

Just to send men out with an approach which begins with "What my material did in the South Pacific" . . . is going to get us exactly nowhere in the postwar era. We must offer our package buyers something to replace the Government Specifications — some dependable peace time standard of performance covering all flexible materials.

Since all materials are involved, it seems to me that the Packaging Institute would be the logical body to become the clearing house for factual information. The Packaging Institute could become to the packaging industry what the S.A.E. group is to the automotive industry.

New materials could be tested, evaluated, and listed strictly on an impartial basis by making duplicate tests in possibly six or eight different laboratories. As a result of the requirements in Government Specifications, laboratories from coast to coast are already equipped with standard testing equipment and follow a uniform testing procedure. If properly organized, a prospective package buyer could feel just as safe with a P. I. Rating (Packaging Institute Rating) as he does now when materials are certified to meet a Government Specification.

We all realize that we had the responsibility of delivering war materials to remote spots on the earth in good condition with costs a secondary factor only. In the peace time market, we know that package material buyers will be just as cost conscious as they were during the prewar era. We are, no doubt, going to have some trouble along these lines, because of the great amount of publicity that has been given to the many so-called new and wonderful packaging materials which have been developed. In the first place, there aren't many radically new materials and most of those which have been developed have been produced without too much regard for the cost, and, therefore, we know from past experience that,

even though they may have marvelous protective qualities, their application will, of necessity, be confined to luxury items where the volume is small.

To produce any of the improved materials at prices within the reach of civilian merchandisers, production organizations will have to be re-built again in most cases.

By and large, I feel it is safe to say that the burden of postwar packaging will fall largely on the same old materials, except that the invisible qualities will be vastly improved. New laminating agents, new coatings and new and better controlled methods of application will account for these improvements. As a result, I expect postwar packages to look pretty much the same as they always have, except they will do a much better job.

QUESTION: Has the war developed any outstanding package forms, designs or material with postwar value?

MR. GILFILLAN: Yes. I do not think that there is any question about it, particularly the package form part of that question. Most people in this room are familiar with the Method II, for instance, which is the Government term for the dehydrated form of packing assembled mechanisms using silica gel inside of a moisture barrier. I do not think there is any question but what that form of packaging is going to be seen on the retail counters.

The other form which I think has come to the front is the small unit package which got its big impetus through its component part in the ration units, your lemon powders and your coffee unit, etc. Before the war started, manufacturers were starting to become conscious of the value of small single shots of this or that item. But the war relatively gave it a push and some of the materials, combinations of metal foils and transparent films laminated together are undoubtedly here to stay, both the materials and the package form.

MR. BUREAU: I have in mind a conveyor, and metal lined bag passing through a sealer on a conveyor. I would like to know what the permissible variation in the voltage line is to keep the heat within the range to seal properly all packages.

MR. GILFILLAN: One of the best answers we have given our customers who have approached us with that problem has been to forget your worries about voltage. Start your heat sealing down below the lip of the package, for example, and allow a little area at the top that is not sealed, and then put an inspector on the line and actually give it a physical test to see if it is heat sealed. As your voltage is liable to go up and down in spite of all the devices you can think of, you cannot beat starting to pull those two surfaces apart and see exactly what you really have not heat sealed.

MR. SINGLETON: (*B. F. Goodrich Co.*). I am thinking of transparent flexible films, not laminated. How far do I think you should go? I want as good an MVT as I can get. I realize that it depends on the size of the package, but for standard conditions, would you say that a flexible film with an MVT of about 0.25 would be good enough to get, say, 80 or 90% of the business and then if they wanted a better MVT you could laminate to a foil?

MR. GILFILLAN: That is a strictly get-your-neck-out question. (Laughter)

If I answer that I would have to start running for the door right away. I can just see it. You have proposed one half of the leg of the problem as far as I am concerned, without the other. There was one thing we hammered into our salesmen: There are no stock answers for a question like that. We want to know what the product is. We won't begin to say 0.25 means anything. We want to know whether you are packaging peanuts or underwear, as I pointed out, and we will vary that and select the proper material for your job.

I don't know really that there is any way of answering that in a stock fashion. I would say, that any barrier however that gives a 0.25 rating with all the other qualities that this gentleman outlined is bound to have thousands of applications.

## MATERIALS SESSION

WEDNESDAY AFTERNOON, November 1

*Chairman:* HENRY J. HOWLETT, *Secretary, American Management Assn.*

Texts of three papers presented at this session not included in this report of the Packaging Institute Conference appear elsewhere in MODERN PACKAGING as follows:

**Aluminum Foil:** DR. THOMAS M. HILL, *Aluminum Co. of America.*

Dr. Hill's paper covered the history of aluminum foil production, its advantage as a packaging material, an outline of its properties and how it may be used in combination with other materials. Substance of this paper, "Fundamentals of Metal Foils," appeared in MODERN PACKAGING, October, 1944, pp. 117-119.

**Saran (Coating and Film):** FRANK J. MacRAE, *Plastics Development Division, Dow Chemical Co.*

Mr. MacRae discussed the properties of Saran, its application for Method II ordnance wraps and its potentials as a postwar, moistureproof packaging material. His account was virtually the same as his article, prepared in collaboration with H. L. Schafer, which appeared in MODERN PACKAGING, December, 1943, pp. 95-99.

**Geon (Coating and Film):** M. S. MOULTON, *Technical Service Engineer, Chemical Division, The B. F. Goodrich Co.*

Mr. Moulton's paper dealt with the combination of properties and the simplified processing techniques obtained from new vinyl resins which The B. F. Goodrich Co. has developed as films and coatings under the trade name of Geon. As Mr. Moulton pointed out in his talk, complete data on Geon resins will be found in his article in this issue of MODERN PACKAGING, pp. 131-133.

**Paper Shipping Bags:** CARL H. HARTMAN, *Technical Director, Bag Division, St. Regis Paper Co.*

In 1935 approximately 310,000,000 multiwall shipping sacks were used by American industry. In 1943 approximately 1,100,000,000 were shipped to American industry, the Army, the Navy and other Government Agencies here and abroad. This represents an increase of approximately 800,000,000 in 8 years — more than 250%. Great additional quantities are produced in other countries.

(After outlining in detail the construction, properties and requirements of multiwall bags, Mr. Hartman continued his comments as follows.)

One or more of the five types of multiwall bags are being used for the shipment of some 300 different commodities, ranging in weight from 25 to 100 lbs. One-hundred-lbs. is the most common unit. The number of plies, their weight and type are selected and combined in countless ways to provide the proper container suitable for each product packed.

Even before Pearl Harbor, the members of the multiwall bag industry had the foresight to appoint a Technical Com-

mittee to cope with these problems. Members of this committee were later appointed by WPB to serve as a Task Group to assist the Army, Navy and other Government agencies in the proper packaging of the many products for which this package could be adapted. The Army adopted Specifications O.Q.M.G. 103-A covering the use of multiwall bags for flour, sugar, rice, peas, beans, salt and other subsistence items. These packages go right into the combat areas and the abuse they must stand can readily be imagined. Similar specifications, 27-B-17 (INT) were adopted by the Navy.

Other specifications are in effect with the Army, Navy, Chemical Warfare Service, Marine Corps, Treasury Procurement, Department of Agriculture, Rubber Reserve and other agencies, and call for the wide use of this splendid package in the war effort. The Marine Corps used this package to solve a troublesome problem in the delivery and storage of high early strength cement to the jungle islands of the Pacific where dock and storage facilities were not available. All containers previously tried had failed.

The Industry's Committee has established with the Bureau of Standards minimum paper quality specifications which did not exist before the war and has recommended methods of testing these completed containers which methods, in some instances, are now being used by Government agencies.

It is not many years ago that the large majority of multiwall bags were used in the construction industry for such products as lime, cement and plaster, but to these have now been added a wide variety of chemicals, foods, agricultural products, fertilizers and many miscellaneous materials. Considering that much of this progress has been made during the recent period of very exacting requirements, multiwall paper shipping sacks must inevitably be in great demand in the immediate postwar period.

**Collapsible Tubes:** W. M. ROSE, *President, Sun Tube Corp., General Extrusion Corp., Tin Salvage Institute.*

The collapsible tube industry and its customers have survived all wartime improvisations and, with very few exceptions, all products habitually packaged in tubes have maintained the market left to them under quotas and restrictions on product ingredients. The normal demand for tubes — the average annual sales from 1927 to 1940 — was 3,500,000 gross per year. The tube industry is now producing at the rate of 5,500,000 gross annually with perhaps 1,000,000 of that amount for strictly military uses, and another 2,000,000 gross for all other rated business. The military demand has increased in recent months. After the demand for these military uses has abated, tubes for civilian purposes should be in abundant supply.

During the past three years, tin and aluminum have been practically eliminated as major materials in tube fabrication. Aluminum is again available for packaging all but shaving preparations. With respect to all other materials, it may be said that the supply is adequate and that quality is reasonably satisfactory. The resumption of the use of tin can be dated at about one year after the Japs have been killed off in Malaya and in the Dutch East Indies. Shall we say in late 1946?

It was suggested that I make special reference to the materials used for internal coatings. There are two groups of these — the wax compounds and the synthetics. Both were developed before the war. Waxes have the purpose of protecting products packed in lead-bearing tubes from contamination by lead absorption. Synthetics have the purpose of protecting the metal from attack by products packaged in aluminum tubes. Any one of half a dozen wax compounds presently available affords competent protection against lead absorption by almost all of the products habitually packaged in tubes. Better waxes than these have been produced and will be produced again. The supply of good wax coatings is adequate and the quality will improve. Some 50 synthetic coating formulae have been developed, each designed to protect aluminum from reaction with a single product or a group of like products. The supply is adequate for the current demand and both supply and quality will improve.

For the future, the tube industry and its customers face the relatively simple problems of reconversion or the many complex and unsolved problems of a revolution in materials.

Until substantial productive capacity has been set up with fully developed techniques, machines and processes, and with manufacturing experience to determine costs, the economic position of the new materials will be open to question. This development is a matter of years, not of months. In the end, the new materials must compete with traditional materials to be successful.

Tubes of the new material must fulfill all of the significant requirements, specified or unspecified, met by metal tubes.

You will recall that some members of the Packaging Institute and all of the members of the tube industry cooperated in the financing and promotion of a scheme to reclaim the metals — especially tin — in used collapsible tubes.

Incidentally, you may be interested to know that in that operation we received over 12 million pounds of used tubes and will complete the job this year with an over-all net profit to the government of about a half-million dollars, and the recovery of about 2,000,000 pounds of tin that otherwise would have been lost to war purposes.

An attempt was made recently to poll the tube industry and its customers on their postwar plans, and the following consensus was the result.

1. The productive capacity of the tube industry is more than adequate to supply the peacetime postwar requirements of its customers.
2. The normal product of the industry fulfills the requirements of the trade and of the public.
3. The present product of the industry is a reasonably satisfactory substitute for the normal product.
4. A large proportion of prewar users of tin tubes indicated their intention to resume the use of such tubes when tin becomes available.
5. A small proportion of this group — tin tube users — indicated that to a limited extent, aluminum tubes would replace tin in the packaging of some of their products.
6. A still smaller proportion of this same group indicated that lead-bearing tubes might replace tin if the cost differential were sufficiently attractive.
7. Users of lead and aluminum tubes were practically unanimous in their intention to continue these types.
8. No manufacturer or user of tubes admitted that a satisfactory substitute had been found for metal tubes.

Unless some international horse-trading in the field of postwar commerce and trade puts a floor above 50 cents per lb.

under the price of tin, the cost of metal should not be above the 47 cent average of the past 30 years. The downward trend of tube prices, exclusive of metal, over that period has been effectively stopped by an 85% to 100% increase in labor costs. Even so, the prices of tubes should not be above 1941 levels.

**Glass Containers and Closures:** DR. F. C. FLINT, *Chief Chemist, Hazel-Atlas Glass Co.*

There have been some good and unusual developments in glass, most of them in fields other than containers.

These things, however they may have called the attention of the public to glass, do not give anything unusual to the purchaser of a glass container. The facts that will be of most interest to glass users are, briefly, those which will give a good package with greater efficiency and less cost. There is nothing dramatic in it but if glass continues to deliver increased efficiency, taking advantage of its own good characteristics and endeavoring to strengthen its weaknesses, the glass package will continue to enjoy its present popularity.

Light effects were formerly limited to the production of interesting colors, at first for art's sake and then by habit in the trade to the use of colored containers for particular fields. Light transmission and its effects are now quite well known, more so as to what the glass will do than the effect of light on the product. We want the value of visibility. Glass is unique in its ability to allow us to see the contents and still have a sturdy, protecting package. Most other materials, within a reasonable price range, that can give as sturdy a protection as glass do not permit the contents to be seen.

The original vegetable jars, having a capacity of 20 oz. to correspond with a No. 2 can, weighed 19 oz. They now weigh 7 to 7½ oz. Twenty-five years ago a plain, round, quart jar weighed 19 oz. and now weighs 11 to 12 oz. In the days of the hand-blown bottles and the early machine-made bottles we had to have a factor of safety large enough to take care of the irregularities of manufacture.

Now our control of the glass composition, uniformity of temperature, use of air, design of molds (all very undramatic operational improvements), and, what is just as important, the institution of testing procedures and analyses which keep everything uniform, have allowed us to cut the weight with a more effective factor of safety to give not just as good a bottle but a better one. These improvements are in uniformity of wall thickness, color, etc. The advantages of lighter, stronger bottles are obvious to the user of glass. Freight saving, customer handling, etc., are part of them.

The redesign of shapes has given us bottles that will stand various types of impacts better than the old designs. The rounded bottom and the sloping shoulder have contributed to a better engineered bottle than we had before. Our knowledge by analysis of what causes bottles to break has helped us to protect them against this breakage before their usefulness is done.

The standardized glass container has advantages for every one. The manufacturer, by getting more bottles out of a furnace because the weight of each one is lighter, by increased machine speeds, by the benefit of long runs, by the benefit of lower freight rates per gross, will be able to supply a package at lower cost to the purchaser than the old line of many small runs of bottles made with designs that were often not as personalized as the purchaser thought but more just an idiosyncrasy.

This standardization, which was commenced before the war, has given a good account of itself even though only partially used during the war. It increased the possible grossage of containers by more than 70% and, with the help of control in sizes purchased, more than doubled the gallonage of contents. It was one of the larger factors that contributed to the glass industry's assistance in the war effort. If the consumer continues to increase purchases of these standardized items, it will make possible savings in which he should share.

Remember that the raw material costs for glass containers are the lowest of all materials used for packaging. The sand, soda and lime, before melting and fabricating, cost less than half a cent a pound. Anything that can contribute to lowering the cost of fabrication is of direct benefit to all.

Glass is going to meet considerable competition in paper, cellophane, tin cans, aluminum cans, magnesium cans and plastics, but we in the glass industry feel that with an even greater uniformity of product, better speeds, lighter weight and better costs we will stay in business a long time — and we are so planning.

**Laminated Films, Foils, Papers:** KARL E. PRINDLE, *Director of Product Development, The Dobeckmun Co.*

Laminated materials have played an important role in the packaging of war products. We believe a number of them will find a place in the post-war period. I want to discuss a few of them that have been successfully used in unit packaging of Army field rations and their postwar applications.

One of the most successful packaging combinations has been 0.001 in. aluminum foil with heat-sealing coating on the inside and laminated on the outside with 0.001 in. cellulose acetate.

This combination was designed for individual size servings of soluble coffee, fruit juice and bouillon powders for Army field rations. These packages, immersed in a vacuum jar containing water will stand 10-20 in. vacuum without leaking. Exposure to 100 deg. F. and 95% humidity for 30 days have shown no failures on properly sealed packages. At 6%, it will start to cake. (Here, Mr. Prindle cited in detail why these small packages should have better protection, because of their proportionately larger surface area in comparison with similar packages of larger size.)

This laminated aluminum foil operates well on automatic packaging machines. In the post-war period this combination should be ideal for small individual portions of soluble coffee, fruit juice powders, beef bouillon, effervescent drugs and hygroscopic tablets and powders.

In addition to the extremely intolerant products mentioned previously, there were other components in the Army Emergency Rations which were somewhat less sensitive to moisture changes but which required a relatively high degree of moisture-vapor protection with heat-sealing and airtight properties. To meet these vital military requirements, a modified wax laminated cellophane was developed. It has been widely used for the packaging of Ration K components and the Ration D chocolate bar. The cellophane used in the Ration K bag is the No. 450 weight while that for the Ration D bar is No. 300

weight. Both cellophanes are the moistureproof type and the best for cold weather durability.

The sheet that comprises the inside wall of the bag has an anchored coating to insure a stronger heat-seal closure and water tightness. The adhesive is a modified micro-crystalline wax type, permanently plastic and moisture-vapor resisting. A minimum of 12 lbs. per ream (24 by 36-500) is used which is equivalent to a thickness of about ½ of thousandth. By having the moistureproof barrier in between the two sheets of cellophane, it is protected against surface abrasion and folding, thus insuring a more moistureproof sheet. It does not delaminate at —20 deg. F. Nor lose its adhesive qualities at 120 deg. F. The moisture-vapor transfer rate of this laminated sheet ranges between 0.2 to 0.3 grams per 100 sq. in. for 24 hours.

Lamination of these films or other types improves the durability at normal temperatures and especially the handling and workability, and imparts dead folding properties which makes handling easier.

The properties of the hot-melt wax adhesive determine to a great extent the characteristics of the laminated sheet. By proper formulation of the adhesive, moisture-vapor transfer rates of 0.2 grams or less can be obtained. Different degrees of flexibility can be obtained from a very soft and leathery sheet to a stiff and rigid one. The requirements of the finished package usually determines the type. In general, one with the highest degree of moistureproofness, one that gives the strongest heat-seals, and one that is best for durability is the ideal combination.

Laminated cellophane was used for the packaging of fruit powders until aluminum foil became available. For such a small package and so hygroscopic a product, it was not sufficiently moistureproof. For products that are not so hygroscopic and that do not have such a low critical moisture content, laminated cellophane is excellent. Its operation on automatic packaging machines has proved very satisfactory. Postwar applications for this type of laminated cellophane are the packaging of dessert powders, vegetable soup mixes, frozen foods, potato chips, salted peanuts, tobacco products and many others either in the form of bags and overwraps or as fabricated on automatic equipment. This laminated cellophane will hold inert gases when properly sealed.

Papers laminated with hot-melt adhesives such as the modified micro-crystalline waxes and asphalt compounds have been in general use for some time and are well known in the packaging industry. There is the glassine paper laminated to itself, glassine laminated to lightweight kraft or sulphite to give greater strength, many types of kraft paper laminated with asphalt adhesives and many other combinations.

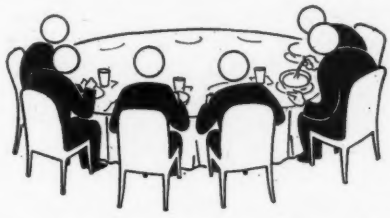
I would like to mention one combination that has been successful in the packaging of 1½ oz. units of cocoa for Army field rations. A siftproof, preformed gusset-style bag made from a 25 lb. sheet of super-calendered plasticized vegetable parchment laminated to a 25 lb. sheet of plasticized glassine with a minimum of 8 lbs. per ream (24 by 35 — 500) of a permanently plastic water-vapor resistant adhesive. The parchment is on the outside of the bag. This bag is constructed with a siftproof bottom and heat-seal closures. This laminated bag is very pliable, fairly moisture-vapor resistant and greaseproof. The most important characteristic is its durability at low and high temperatures. The small bag of cocoa is actually forced into a small irregular space of the Ration "C" can. This bag, made of this combination, has proved very durable where the use conditions are severe.

The choice of a laminated material for any particular use cannot be arbitrarily decided. It requires full knowledge of the product to be packaged and its distribution.

Each type of laminated material has its place. Each has proven itself under rugged conditions. Each will find many peace-time applications in the days and years ahead.

**Wax Coatings, Synthetics, Blends:** M. T. ROGERS, *Manager, Packaging Division, Dewey and Almy Chemical Co.*

Over the years, the Dewey and Almy Chemical Co. has built its business and its reputation on the firm foundation of research and carefully controlled manufacture of specialty products, most of them based on rubber. The major part of the business has been in sealing compounds for tin and glass containers. Because of the knowledge gained in these activities, it was natural that, a few years ago, we should turn our attention to the growing frozen food industry. Tight packages



were needed and, for various reasons, the can and glass manufacturers did not choose to enter this field. Two developments have been outstanding — the Cry-O-Vac bag, designed principally for packing irregular shaped products to be frozen and stored, and thermoplastic coatings for frozen food cartons. Both developments were stopped short when the Rubber Order was issued in 1942 — Cry-O-Vac is still a casualty, because the pressure of other work has prevented us from yet perfecting a substitute.

In the case of thermoplastic coatings, however, we have found substitutes for critical materials and have made successfully various coatings for cartons and carton stock which, in many instances, are superior to the original materials they replace.

Our Darex thermoplastic coatings and adhesives are made from selected blends of wax which have been reacted with complex non-waxy materials to yield homogeneous, plastic, film-forming products. They are stable throughout the operating range of their use and do not separate, stratify or throw out in the melting tanks. They vary from hard, non-blocking films to soft, permanently plastic adhesives, all of which are sealable under heat and pressure.

The first problem is to build into these materials definite functional properties. If a packaged product is not affected by the elements, no protection is needed. But if it deteriorates, during storage, because of a pickup of moisture or because moisture has a tendency to leave the product, the package *must* have some sort of protection.

Admittedly, tin cans or glass jars do the job. For various reasons, however, and for certain products, paper packages are desired, and the challenge to the industry is to make those paper packages completely moisture-vaporproof. Much work has been done by the paper industry to improve the type of paper produced and, doubtless, further advances will be made. But there is always present the possibility of transfer of moisture-vapor where the paper has been broken by scoring or in the seals.

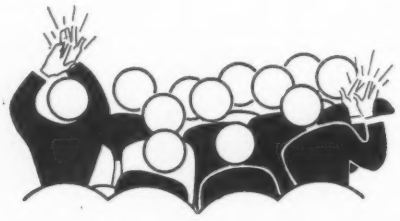
The work which has been done for the armed services during the last few years has taught people that much can be accomplished by proper coating and it is our opinion that

packers, who formerly paid little attention to the complete protection of their products, are now beginning to realize that failure to do so may make a great deal of difference in their sales. If you have ever eaten dried cereals as they come from the processing plants, you know what I mean.

Under functional properties we list the following:

1. Maximum protection. We believe that a finished carton can be so built and coated that the moisture-vapor transfer need not exceed 0.10 grams per 100 sq. in. per 24 hours at 90 deg. F. and 85% relative humidity, using calcium chloride packed in the carton. We contend that all tests should be made on finished packages — not on the paper stock.
2. The coating must perform satisfactorily within the temperature ranges desired by the customer. In the case of the armed services, this is now −20 deg. F. and +140 deg. F. In commercial work, the low temperature requirements may be different.
3. Coatings must have sufficient hardness so they do not scuff off. We advocate a standard abrasion test to determine these characteristics.
4. Another value of hardness is resistance to pick-up of dust while the package is on the shelf.
5. Obviously, particularly where food is being packed, the coating must be non-toxic, odorless and flavorless.
6. Because the problem of resisting insect infestation is acute where food products are packed, the coating must, without the addition of insecticides, present a smooth hard surface where there will be no opportunity for the insects to catch hold. This is considered one of the outstanding advantages of properly coated cartons.

Probably the greatest objection to the use of coatings of this type for consumer packages is the matter of appearance. It is possible even today to make reasonably clear coatings which on some colored stocks look well. There is some evidence to show that over long storage periods, colors have less tendency to fade, if coated. However, our studies have convinced us that when certain raw materials not now available can be obtained, a lot of these troubles with appearance will be overcome.



We look forward to the day when trained men can discuss the problems with a prospective packer and make intelligent recommendations based on a really scientific analysis. The packer must study his product more carefully to know definitely what is required.

In the matter of equipment, the coating salesman must know the ground just as thoroughly and be able to make constructive suggestions.

Now to be more specific as to where a coating manufacturer may be able to offer more to the packaging industry of the future.

a. In the paper converting field, there is a need for better bag laminating materials. We have seen definite improvements made in the last two years and are confident that with the release of various raw materials, even greater strides will be made.
b. Protective coatings for various kinds of paper are, in our opinion, destined to play a more important part. Where so much more can be accomplished by compounding waxes with other materials of completely different characteristics, it seems inevitable that this field is going to see some interesting changes. We feel that we have already made some significant contributions and think we can do much more as new raw materials come along.
c. In the field of carton coating — that is, applying the coating after the carton is set up or packed — there are three developments, two of which loom up large on the future horizon. I refer to the Dacca method of treating cartons, a patented process owned jointly by the Container Corp. of America and ourselves, and the Double-Dip method. Dacca involves:
   1. Carefully sealing the bottom flaps.
   2. Dipping the built-up carton in a bath of thermoplastic coating.
   3. Passing the dipped carton through a heated draining chamber.
   4. Cooling the carton.
   5. Filling the carton.
   6. Sealing the top flaps by an application of heat and pressure. No adhesive is needed, as the coating is self-sealing.

Dacca has already been used successfully on a full commercial scale by one frozen food packer and by two packers of cereal products. One of the latter used the Dacca process in packaging dried eggs in 5-oz. cartons and, to the best of our knowledge, his operation was the lowest cost method of packaging approved by the Department of Agriculture.

The second develoment for the protection of small packages is the single outside dip. In this case, the filled and sealed cartons are passed through a bath of thermoplastic coating. If the outside dip is to continue after the war, the coatings must be superior in appearance to those of today. This is perfectly possible, of course, but in our opinion the Dacca method is preferable.

The other promising protective method referred to is the "Double-Dip" operation. This was developed in cooperation with Ordnance for packaging small arms ammunition. The success of the double-dip operation has depended on the following: 1. The proper type of board stock for the cartons. 2. The correct design of the carton and painstaking manufacturing technique. 3. Automatic handling through the specially designed dipping machine, supplied by Standard-Knapp.

The Quartermaster Department first adopted the double-dip method for Ration "J" which was packed on the Pacific Coast and contained several materials which needed maximum protection. Because Ration "J" went through so successfully, it was decided to use the double-dip method for Ration "10-in-1" and tremendous production speeds have been obtained by the several packers of this ration. The double-dip method has also been used for packaging dried fruits.

It has surely been proved that this method can produce packages which are entirely satisfactory under the severe conditions imposed by the war. It is our belief that it holds possibilities for the future because it gives complete protection from moisture-vapor to bulk packaged materials.

Apart from the coating and laminating problems discussed, there is another possibility which seems to us to hold promise. I refer to the increased use of thermoplastic adhesives for sealing cartons and cases. It may mean a modification of present sealing machinery but the advantages to be gained will make this profitable for the packaging industry. These will include moisture-vaporproofness and siftproofness of the flap seal, and also less floor space for setting the seal because the grab is almost instantaneous.

QUESTION: Just what effect will standardization have on cost?

DR. FLINT: Standardization will have its effect on cost to

the extent to which the customers desire to use the standardized containers. It does no good to standardize if there are not many of them made. The glass manufacturer wants to make them. He knows the savings that are possible. He knows the improvement and quality that can be obtained with the standardized product. If the customer wants it in volume sufficient, the cost will be reflected accordingly.

QUESTION: I understand that Saran has a definite odor. Will you please discuss the odor of the present films and give an indication of what may be expected?

MR. MACRAE: The present odor is from the plasticizer. This film was primarily designed as a moisture barrier for metal parts packaging and the plasticizer was chosen for the function it would serve in that particular regard. Tastless and odorless plasticizers and films are under development.

QUESTION: Mr. Moulton, how may Geon latex be coagulated by the user?

MR. MOULTON: It may be coagulated by dehydration; that is, by evaporating the water or by addition of positively charged ions; acids, for example.

I might say that the material physically is very similar to natural rubber latex; its oil dispersion is amenable to the same actions as natural rubber latex.

QUESTION: Will an adequate supply of tubes be available for non-military purposes?

MR. ROSE: I would say that an adequate supply of metal tubes for civilian purposes should be coming into production about the second quarter of next year.

QUESTION: Why do you stress the accuracy of carton manufacture where thermoplastic coatings are used?

MR. ROGERS: In the case of the double-dip package, for instance, going through the machine as fast as it did and the speed of production now is running somewhere between 35 and 40 packages per minute of the large cartons holding hygroscopic materials. If the flaps do not come together properly, you leave an opening where the coating might flow on through. The specifications as the Army has set them up have been very rigid in this respect and very rightly so. In the smaller packages, we like a double flap in the ends of course, and there again if those do not come over squarely and leave corners, you are in trouble if you try to apply thermoplastic coatings to the outer side.

QUESTION: How does the moisture vapor transmission rate of Saran maintain itself when the film is folded, creased or crumpled?

MR. MACRAE: Repeated foldings seem to have no effect on the MVT. We have run samples up as high as 100,000 folds in the tester and they seem to stand up all right.

QUESTION: Why was 12 lbs. of wax adhesive specified in laminating two sheets of cellophane for ration K and D bar bags? What is its significance to industry generally?

MR. PRINDLE: The original specifications called for 18 lbs. per ream. But to conserve microcrystalline wax, it was reduced to 12 lbs. Twelve pounds gives a good moisture-vapor transmission rate. It is not quite, however, as good as a heavier application.

QUESTION: Will lead bearing tubes with internal coating replace tin tubes to any great extent when tin is plentiful?

MR. ROSE: The lead bearing tubes with the tin coating have been on the market for some seven years. The maximum percentage of the total tubes represented by lead-bearing tin-coated tubes was about 5%. It seems reasonable to assume that if the lower price of that type of tube did not influence or did not increase its use over a period of seven years, to more than 5%, that it would require some very different economic factor in the future to increase materially the overall use of that type of tube. The wax coating, of course, costs an additional amount, increases the price of the tube. So that economically the difference between the tin tube and the tin coated lead tube is not as great.

It is my personal opinion that the improved, or the better appearance of the tin tube, public acceptance of a number of products packaged in tubes, has insisted upon tin for things like toothpaste, that go into the mouth. I think that the public demand will overcome in large measure the comparatively slight difference in the cost of the container. I do not look for a great increase in tin coated lead tubes.

QUESTION: Has any proved and standard means of testing shipping sacks been developed?

MR. HARTMAN: That work is not completed. It is recognized by the Technical Committee of our industry as being very important. Prior to this war and prior to the creation of the Technical Committee, there were no standard methods. However, the Technical Committee of the industry, in cooperation, have attempted to establish such standards and such standard methods are in the making.

QUESTION: What is the lightest gauge foil I should use in my flat envelope package to gain moisture protection? The theoretical packet is heat-sealed on three sides and contains fine, dry beverage powder.

DR. HILL: We will stick by our 0.001 thick foil as being essentially free from pin holes. That is based on the idea that your metal stood all of the protecting. If you are combining metal with other materials, you obviously have a great deal of leeway, depending on the type of plastic or other agent that you are using with another. We think 0.001 would assure you that protection.

QUESTION: Why hasn't paper laminated to cellophane been more widely used in the packaging of field ration components?

MR. PRINDLE: The main reason cellophane is not stable is that it causes considerable shrinkage in the lamination. It is also difficult to get as good watertight seals as you can when you use double cellophane.

QUESTION: What is the production speed of double wax dipping equipment and what kind of equipment is needed? What are the costs as compared with the savings?

MR. ROGERS: The double-dip box equipment as supplied by the Standard Corp. was originally designed to put through 12 packages of small arms ammunition per minute. The requirements of the Quartermaster's Department were greater than that and today they are producing between 35 and 40 per minute.

In the case of the packaging of dried fruit where there are many thousands of tons to be supplied to the Army, the speed is not as great as that which is attained in the ten-in-one ration package.

At the present time, our estimates are that it would cost somewhere between a quarter and a half a cent a pound more for a 25 lb. package of prunes, for instance.

QUESTION: How does the crystallinity of Saran affect its heat-sealing characteristics?

MR. MACRAE: In general, crystalline materials have sharp melting points. These may be broadened somewhat by the addition of a plasticizer. Heat sealing is actually welding and that is dependent upon the degree of fluidity at a given temperature. Some of the Saran copolymers have fairly sharp

ranges, whereas others have extremely broad ranges similar to that of hydrochloride.

QUESTION: The film that is being presently used on aluminum foil for the small packages is not wholly satisfactory. One has, it is true, a low water-vapor transmission rate. But the seal is poor. I wanted to ask Mr. Prindle or Dr. Hill if in the near future we may expect a superior adhesive polyvinyl acetate for making the heat-sealed envelope?

MR. PRINDLE: To date we have not any adhesive that gives as strong a bond and also that is as highly moisture-vapor-proof, more so than the present one we are using. We are constantly working on this and some day we hope we will have both combinations.

DR. HILL: I agree with Mr. Prindle that there is work being done on that. There are other limiting factors besides the material, because it depends on available equipment, the amount of equipment that can carry on that type of operation. Our field is somewhat limited. I think there is a chance for improvement.

QUESTION: What about the possibility of polyvinyline butrate for that job? The very fact that you have a polyvinyline acetate there allows it, chemically at least, to have some susceptibility to hydrolysis, and there is no doubt that polyvinyline acetate is not really a truly water-vaporproof material.

MR. PRINDLE: You are referring to the coating I presume, rather than the adhesive for laminating acetates for foil?

QUESTION: I am referring to the inside heat-sealing material on the foil.

MR. PRINDLE: Polyvinyline butrate foil does have possibilities. There are two objections that we have run into so far. The odor is not so good as the polyvinyline acetate modified type we are using now and we have not been able to get as good adhesion to the foil using polyvinyline butrate as they are able with lead foil and some of the other combinations. But we are working on this problem.

MR. R. A. WOLTERDING: (*Kimberly-Clark*): Mr. Moulton, you mentioned Geon foil as being suitable for wet strength on paper. When that is used, how is it used? As a tub size or as a butrate operation or a coating, or what?

MR. MOULTON: The gentleman wishes to know how Geon might be used in producing a high wet strength paper. The answer is that we would like to have him help us find out.

## PRODUCTION REQUIREMENTS SESSION

THURSDAY MORNING, November 2.

*Chairman:* HERBERT H. LEONARD, *President, American Machine & Foundry Co.*

**Unfulfilled Packaging Needs:** E. F. DIVAL, *Director of Packaging, Corn Products Refining Co.*

Liquid Products in Small Packages: Much scientific thought has been given the manufacture of glass bottles. A shipping container for bottles has a greater duty to perform than for other types of packages such as cans, cartons, etc. Instead of the conventional single wall corrugated slotted partitions, why not inner packing that would cost no more yet protect the bottles more effectively where they need it, taking the material from where it is not required? Conbur and shipping test will reveal that more bottles are broken in the center cells of the container than at the side and end walls.

Shipping containers ride better when loaded longitudinally in the car than when loaded crosswise. Between the end row of bottles in one container and the end row of bottles in the next container, when loaded in the box car, there are two walls of corrugated material. Generally speaking, there is between the individual bottles in the container but one wall of corrugated material. Why not double-wall, shoulder-high cross partitions?

The corrugating medium in the shipping container, whether for 125 lb., 175 lb., 200 lb., or 275 lb. test, is generally of the same caliber. While I know there are certain limitations, I would like to see some corrugated construction made with higher quality or heavier caliber material and, to compensate for this, a proportionate reduction in the caliber of the liners.

Glass bottle corrugated shipping containers would protect products much more effectively if a degree of stiffness were injected into the liners to avoid telescoping when cars are subjected to transit shocks. This telescoping is more prevalent during high humidity conditions. Probably the knowledge gained by container manufacturers in perfecting V-board might be useful in minimizing the softening up of the containers when subjected to high humidities.

While I recognize the advantages of a round bottle — both from its structural standpoint and ease of handling — the fact remains that 106% more space is required in a shipping container for 24 round pint stock bottles than for 24 square cans with conventional pouring spout. Why not some modification in bottle design for food products that will reduce the cube and the paperboard footage of the shipping container considerably? The square glass milk bottle, as I understand it, saves approximately 24½% of space as compared with the round bottle of equal capacity.

Then it should be possible to work out some type of tin can for viscous products that would permit the housewife more readily to pour from same than from the so-called friction-top can. The can should be one that could be opened without a tool and reclosed.

Likewise, there should be some thought given to a can for edible oil that will permit the housewife to pour out the product without spilling some of it either on the top or side wall of the can. Certain types of pouring spouts or nozzles are sometimes objectionable because the cans cannot be stacked for display in retail stores. Flush-type spouts have the objectionable feature that the gutter is too shallow.

If the resultant product would be capable of fabricating, an aluminum coated steel sheet should have its place for making such parts as require no soldering.

A batch-marking ink that would really stick to tinplate, the surface of which sometimes carries a slight film of oil, would be a great help.

Dry Products in Small Packages: A siftproof carton for finely powdered products, making unnecessary an overwrap, should be possible at a cost not exceeding an ordinary printed carton such as used for some of the more granular products. A siftproof carton should be foolproof without relying too much on adhesives.

In some cases tight wrappers are desirable for purposes other than siftproofing. In such cases wrappers might well be fed from roll stock with electric eye cut-off. This should permit increased speed and lighter weight paper.

Tight-wrapping equipment could well be improved so as to minimize poor paneling and air pockets that detract from shelf appeal.

A carton cutting and creasing press that would automatically strip the scrap would be quite a contribution.

Machines for labeling cans, bottles, etc., might be designed also to use labels from printed stock in rolls.

Machine designers should design packaging equipment with fewer cams and moving parts. They should likewise assume that higher speed in the postwar era will be essential. With all the light metals that undoubtedly will be in abundance after the war, necessary moving parts should be made from such instead of the heavier metals.

Dry Products in Bulk Packages: There is a need for an automatic scale and packer for packing products such as dextrose in 100 lb. multi-wall paper or textile bags. This is not as easy as it may sound, as the product during high humidity conditions often has a tendency to build up in the weigh bucket and also gum up the weighing mechanism.

Automatic weighing and packing of a non-free-flowing product such as starch is badly needed by the industry. At the present time screw packers are employed and each bag must be check-weighed by hand before closing. This is obviously a slow and costly operation.

Generally speaking, the sewed closure is the weakest part of the bag. At high speed rate of production, when paper tape is being applied simultaneously with sewing, it is difficult for the operator to be sure that both top edges of the bag are well up within sewing range. He cannot see through the tape. Is it possible that there are methods other than sewing for closing these paper bags?

It would seem that for the very finely powdered products, cotton sheeting from which 100 lb. bags are made could be so treated as to make them much more siftproof than they are at present.

Equipment for automatically applying batch marks to 100 lb. multi-wall and textile bags at time of packing would be desirable. At present the batch marks are applied manually to bags in flat, previous to the packing operation. It is sometimes difficult to anticipate the exact number of bags needed to complete the batch.

Warehousing and Carloading: There is still some thinking to be done with regard to materials handling with electric trucks. Pallets — either of wood or steel — are generally expensive when large numbers are required. The total cost of these, plus the cost of truck, oftentimes makes justification difficult. Why not a truck that will handle certain commodities without pallets or skids? Or why not a *really* low priced-pallet?

Now could I do a little day-dreaming? (1) Can we expect cans drawn or extruded from aluminum alloy to compete with tin cans? (2) How long are we to wait for plastic bottles? (3) Why not a shatter-proof or non-breakable glass bottle?

QUESTION: Is some form of dust cover essential in connection with the flush-type pouring spout for edible oil cans?

MR. DIVAL: Yes. I don't know of anything much more disagreeable to look at than oil that is oxidized on the surface of either the can top or the pouring spout after dust has accumulated.

QUESTION: Which do you consider the most practical approach to the solution of automatic weighing of dextrose in 100-lb. units — the gross or the net weighers?

MR. DIVAL: I would approach the thing from a gross-weighing standpoint, because I have seen sugar in high humidity cans that would be pretty sticky and if the stuff is going to lodge in the weigher buckets, I can't see how any manufacturer will guarantee that all the sugar, although properly weighed, will go into the bag.

QUESTION: What would you suggest as the best means of holding down shoulder-high partitions used in shipping containers for glass bottles?

MR. DIVAL: I thought I had made myself clear when I said shoulder-high cross partitions, and not all of the partitions — I recognize the fact that if all of the partitions were shoulder-high, there would be that tendency to crowd upward. So the cross partitions should be shoulder high, double, and the longitudinal partitions should be full height single partitions. That would hold them down.

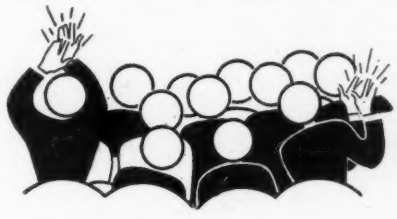
**Greatest Urgency — Machines:** GLENN E. TRUAX, *Manager, Packaging & Planning, Peter Cailler Kohler Swiss Chocolates Co., Inc.*

If the production men who are present today were asked to state their most urgent postwar production requirement, I think the majority could answer with one word: Machines.

It is generally conceded that many of the machines in service prior to the present emergency will need to be rebuilt or replaced. It is in the replacement of these machines and in the development of new machines that we are interested.

First, there is the requirement for completely automatic machinery to perform operations which are now being done by hand or by semi-automatic machinery.

An integrated packaging line should be made up of separate units — each of the separate units or machines to perform a part of the complete operation. One advantage of this would be to allow the small manufacturer to purchase one or more units of the line and start a semi-automatic operation. As his business progresses and the necessary capital



is available, he could purchase the additional units and eventually have a complete line. This would also be of value to larger concerns setting up a new line for a new product the future of which is uncertain.

The various units of the automatic line should be interchangeable with similar units in other lines. If a concern had several lines, spare units could be available to move into the line in case of mechanical breakdown.

In packaging equipment and machinery, streamlining can serve a dual purpose — appearance and cleanliness. Both are of particular importance in a food industry. Appearance improves working conditions as well as dressing up the plant. Even more important, streamlining will make machines easier to clean. It is important that unnecessary corners, grooves, etc., which are difficult to clean and are possible sources of infestation be eliminated.

Machines must be easily adjustable for changes in package size. In certain industries, the article which is being produced is sold at a standard price and the variations in costs must be compensated for by a change in the size of the

article produced. Further, machines should be easily adjustable to compensate for variations in packaging materials.

The machines should be built to operate over a long period of time with a minimum of skilled mechanical maintenance. Machines should be provided with an automatic lubricating system.

Packaging machines should be designed to operate quietly. In the designing of machines in many cases a choice of mechanical movements is possible. Other factors being equal, the movement which will operate the quietest should be used.

Another desirable feature, especially in semi-automatic machinery, is provision for operation of the machine at slower than optimum speed. This would allow machines to be operated at a lower speed when a new installation is made or when it is necessary to use a new crew of operators.

The manufacturer has an obligation to the production

man to apply constant research in the improvement and advancement of the machinery. The production man has an obligation to the manufacturer to keep him constantly posted in regard to operating problems and suggested improvements which apply to universal use of the equipment. Both obligations are of key importance — both must be fulfilled.

MR. KIMBALL *(Standard-Knapp Corp):* I would like to ask whether the gentleman believes that a production man, when he buys a machine, will be willing to pay for automatic or perhaps forced speed lubrication? Some of these suggestions that were made cost a good deal of money, and in actual practice it seems to us that sometimes the desirability of covering up these chains and having this forced speed lubrication is outweighed by the cost involved.

C. H. NITCH *(Stokes & Smith Company):* In my opinion, appearance and ability to keep the machines clean is very important. Beyond that point, I don't think streamlining is called for in our industry. I think the statement was made that it is cheaper to make some parts in streamline shape. It is hardly fair to compare the machines we manufacture with the high production brought about in refrigerators; we cannot build big presses and make necessary dies.

Mr. Kimball brings up a point too. We have always found with regard to the possibility of one-shot lubrication that the cost is way beyond what the industry will pay.

I don't think we are so much concerned about beauty in an industrial plant. Machines should look attractive, but we are not going into a modern kitchen where the housewife talks about the beautiful shapes and lines.

MR. MARTERSTECK (*Seagram's*): I think one thing that everybody is overlooking is the effect of streamlining on the employees on the line. In most cases, those employees are women, and it has proven in our plant at least that we can get more work out of the personnel where we have streamlined equipment.

MR. TRUAX: There have been several points raised. Of course, I knew there would be. I realize I asked for the things that we desired. I don't know whether or not, as Mr. Kimball pointed out, they could be brought within the range of the price that the companies can pay. That remains to be settled.

**A Story with a Moral:** A. F. STEVENSON, *General Superintendent, The Borden Co.*

I am going to relate an experience of ours that had a rather unusual ending; possibly a moral can be drawn from it.

For many years, the Borden Company has been making malted milk. They have been the leading factors in the industry. A great deal of that malted milk goes to the soda fountain trade and is packed in what we term bulk containers. This is a five-pound container [showing a lithographed metal can]. This type of package has been adopted by the whole industry. The general design was adopted over 30 years ago.

This can was placed on the back bar of the soda fountain and was part of the decorations. Therefore, it was made as attractive as possible.

As the soda fountain equipment improved, a dispenser — first a jar with a spoon in it and later an automatic dispenser — was used in place of the can. However, the can was never changed. The whole industry sells in this type of container.

When materials became critical, we were first, of course, out of tin plate. We then used black iron and when black iron was denied us, most of the industry turned to glass containers. But just before the war we placed on the market, in an experimental way, a new product that had unusual acceptance and as the war opened, that product was offered for sale over the whole country. The results were extremely gratifying, and the sales were large, so that when the time came to convert from metal to glass, and we were allowed glass containers in proportion to the metal containers we had used, our allotment of glass was not sufficient to handle our production.

The new product is a household product. It was packed in glass and our quota was used that way. We had been interested for some time in moisture-resisting flexible containers and, naturally, when we could not get metal or glass, accepted, after careful study, a flexible container that was satisfactory as far as product protection was concerned.

Our competitors, of course, packed in glass.

This is a sample of our five-pound package [showing a corrugated box with laminated kraft bag inside], which we admit is not as beautiful as the metal can, but we were convinced that it would protect the product, which it did.

We placed just under the cover a note explaining the reason for the new package and how to use it.

The new package was placed on the market. We soon heard from the large buyers—those with large fountains. They bought the 25-lb. packages. The 25-lb. package consists of two corrugated containers inside a shipping case and each package contains a laminated bag holding 12½ lbs. of malted milk. The larger users looked at this container and said: "You don't expect us to pay the same price for an article packed in a paper bag as for one packed in a beautiful container like this?" The actual difference in cost between the 25-lb. can and the two bags and the three corrugated cartons is less than a half a cent a pound, but the trade insisted that the new container should be sold for three cents a pound less than the metal one.

We heard from the jobbers and fountain owners statements like this: "Malted milk in paper bags? Brown paper bags are no good for malted milk." We assured them that the

package was satisfactory but they, knowing nothing about recent developments in the construction of moisture-resisting flexible containers, were still unconvinced. The fountain operators also were skeptical and said: "You can't keep malted milk in a brown paper bag. We can't keep it in a can if we don't keep the cover screwed on." And we again tried to reassure them. But many of them neglected to roll down the upper part of the bag after removing part of the contents. When they attempted to use the remainder and found it caked, they then felt that their contention was correct and the new container was useless.

This container is perfectly satisfactory from the shipper's standpoint and if reasonable care is used in reclosing it after use, it is satisfactory from the customer's standpoint. The Borden company has used metal and glass containers with great success and we have nothing against the use of flexible containers. We, however, are selling malted milk and are not selling flexible containers. We do not feel that it is our job to do the missionary work on this new type of package.

By the time we could get the idea over that the containers are good containers we would have no malted milk business left.

The tin plate and aluminum container companies for years have been telling the public in full-page advertisements that if they get anything packed in a metal container and the container is normal in appearance, they are guaranteed that the content is satisfactory. The glass container people have done the same thing, stressing the point that the product inside can be seen.

The trade knows little or nothing about flexible containers and it is our belief that packers will meet sales resistance until, by publicity, the public is taught the virtues of the flexible package. This job, we believe, is in the laps of those of you who produce materials or fabricate packages. Conversion from metal or glass to paper containers for products with years of back history is extremely dangerous until the public is educated.

Borden's malted milk will be packed again in metal containers as soon as such containers are available.

**High-Speed Bottling:** P. J. MARTERSTECK, *Director of Purchases, Joseph E. Seagram & Sons, Inc.*

We are vitally interested in obtaining for our bottling plants completely automatic high-speed equipment. The equipment shall be so constructed that it will occupy a minimum of space and handle quart, fifth, pint and half-pint size bottles interchangeably.

The automatic bottling line must unload the cases, clean the bottles by filtered compressed air, accurately fill, cap, and label, apply the strip stamp and cellulose neck band and dry the band. The bottles will then be automatically loaded into cartons and the cartons sealed and imprinted with serial number, date and other information.

We are restricted as are other manufacturers by the amount of space that we have.

The bottling lines must operate at a speed of 120 bottles per minute. The operations of a bottling plant in a distillery are governed by treasury regulations. We cannot operate around the clock; we, too, have peak loads; so our bottling plants must be capable of producing a maximum number of cases whenever required.

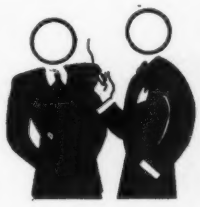
Each of the individual machines on a line should be synchronized with all other units in order to reduce bottling breakage. Consideration should be given to combination machines such as combination cleaners, fillers, and cappers; in order to reduce the amount of space required and also to provide a better control over the bottles. A low level of noise is certainly desired from a personnel standpoint. Certainly, a well designed, well lighted plant with streamlined, easy-to-keep-clean machinery offers more appeal to the employee than a disorderly, noisy room jammed with complicated and, at times, dangerous-looking machinery.

We have been disappointed occasionally by encountering resistance on the manufacturers' part to streamlining. A few have flatly stated that it is a mistake to shroud bottling equipment because the shrouding impedes proper maintenance.

We've reached many of the objectives. We have cleaners, fillers, cappers, labellers, and sealing machines. We need better cleaners, better labellers, strip-stamp application machines, cellulose band application machines, cellulose band driers, case unloaders and loaders.

Better cleaners can be built. To improve the labellers, it may be necessary to change our type of labels. We are presently investigating heat-seal labels, having discarded, for the present at least, the pressure type.

Strip-stamp machines have been made but need to be perfected and made more flexible for high speed operations. We have appealed to the Treasury Department in our effort to change the present strip stamp form. Why not print them in a roll instead of sheets? Why not permit cap manufacturers to lithograph strip stamps on pilfer-proof or tear-tab caps?



Machines for automatically applying cellulose bands are being designed by two companies I know of. Perhaps, some of the new plastics will supersede the cellulose bands. Why not a plastic band which can be heat-shrunk or heat-sealed with the advantage of being easily lithographed in many colors? Cellulose band driers are past the experimental stage. Just two weeks ago we tried a laboratory model in our Louisville bottling plant. It works.

We are confident that more uniform bottling materials such as labels, bottles, caps, and glues can be obtained. To this end we have compiled specifications on these materials which list the qualities we want and the tolerances which we can handle on high speed lines.

A chronic complaint received from our Bottling Departments is the wrinkling of labels. Many ideas have been tried to eliminate this bubbling or wrinkling. The labels are pebbled or embossed to provide better adhesion. Great care is taken in the selection of bottles to insure uniformly curved surfaces. Glues have been standardized even down to the particular type of labeller on which the glue is used. However, when it was proposed to standardize our paper stock from which our labels were to be made, we slammed into a stone wall. The paper manufacturers refused to divulge the composition of their various types of papers. It is apparently a trade secret.

We are now working with several glass manufacturers in an attempt to reduce the weight of our bottles.

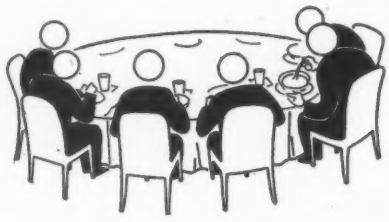
One of our serious capping troubles is the absence of liners in a small percentage of caps which are received. When a cap without a liner is applied, the contents of that particular bottle are usually lost in transit. In order to avoid this difficulty, we have designed a cap ejector which will

kick caps out of the capper chute if the caps do not have liners.

We know that we must appeal to manufacturers of packaging materials and equipment to cooperate with us, and we feel that by so doing, they will improve their competitive position in their own respective fields.

**Search for a Perfect Package:** JOHN H. NAIR, *Assistant Director of Research, Thomas J. Lipton, Inc.*

In any discussion of the qualities necessary for a container to hold foods for retail sale, the use of metal is all too frequently considered to be the complete answer. It is true that the tin can offers many distinct advantages for processed foods. However, it does not represent the ideal package for all foods.



Limitations imposed by considerations of shape, weight, cost and available handling equipment may often make a laminated bag or box a preferable type of package. For satisfactory use in packing dry and powdered foods such a bag needs to be moisture-vapor resistant, heat-sealable, vermin-proof and as cheap or cheaper than a tin can of equal capacity. In addition, the product may require that the package be grease-proof, light-proof, and gas-tight. So far as I know there is no laminated box or bag available today which meets all of these requirements.

We certainly are far from reaching the desired mechanization in filling, sealing and casing of laminated bags. Accuracy of fill, adequacy of sealing, and greater automatic handling of casing of filled packages are goals which appear not only desirable but essential.

The emphasis upon adequate protection of foodstuffs against oxidation by means of an atmosphere of inert gas, which has become so pronounced in recent years, necessitates better equipment for the vacuumizing and gasing operations. One necessity is lower residual oxygen contents than are normally obtained with existing equipment.

The food manufacturer is always faced with the necessity of determining what kind and type of package and what sort of packaging equipment will best suit the needs of his product. In the past he usually consulted some manufacturer of cans or barrels or bags or molded containers who had information on the characteristics of the particular material of which the package was made as well as on adhesives used and closing machinery available for the particular type of container. Representatives of the particular manufacturers instead of trying to guide the food company to the best possible package for his product usually tried to sell one or another of the containers which their company made.

Similarly, if a particular manufacturer of package filling and closing equipment were consulted his representative attempted to sell the food manufacturer the idea of using a package which would work well with his particular equipment.

One direction in which it seems to me that the packaging industry needs to extend its services to the manufacturer using containers is in the compilation of data on such matters as distribution systems, local climatic conditions, marketing problems, and local consumer customs in various sections of the United States and its possessions and, probably, in the Western Hemisphere, if not in more distant overseas areas. Few food manufacturers have sufficient volume or financial resources to warrant the cost involved in the extensive investigations necessary to develop such data.

Another complaint which food manufacturers have is that the packaging companies too often force the user to do the research on the suitability of the product of the particular company to the use which might be made of it. It seems logical that the food manufacturer should be able to obtain, in advance, technical information as to the character and performance of particular packaging equipment, its limitations and its possibilities.

The manufacturer of a package should be in a position to tell the user the shipping qualities of the finished container, not merely the moisture-vapor-transmission curve for the particular material used. The fabricator of the package should have technical data on such questions as the sealing quality of the bag or box, its resistance to fat staining, its freedom from any residual odor of solvents used; what weakness, if any, the fabricated package may have.

Another co-operative effort in which the packaging industry has a real responsibility is the establishment and support of a center comparable to the Technical Association of the Pulp and Paper Institute, with which most of you are familiar. Here men might be trained to do research on the adaptation of old and new materials and equipment to specific packaging problems. This would provide a source from which to draw men to fill positions with individual manufacturers of packages and packaging equipment as well as for packaging supervisors in plants purchasing such materials and supplies.

The permanent staff of such an institute might well carry on research on problems which are of interest to equipment manufacturers or to makers of containers. It might serve as a clearing house for new products which might even go so far as to include a stamp of approval.

Some of these latter suggestions, I am sure, are not new to this group. Some of them may be quite debatable. From the standpoint of a food manufacturer they represent steps which one feels we might reasonably expect the packaging industry to take.

**Continuing Need for Research:** C. L. RUMBERGER, *Packaging Director, H. J. Heinz Co.*

It seems we have been asked to assume a share of the responsibility in this program because of a passing remark made at one of the recent packaging conferences. This statement was to the effect that according to the more recently developed programs at packaging conferences the program builders had forgotten there were other types of materials than paper and board in which merchandise was packed.

As you gentlemen are aware, most foods have been packaged in glass and tin for many years. When these packages became practically obsolete as per the necessary plans of WPB early in 1942, it is no secret that those of us who knew little about packaging of foods in paper or board felt that we had probably slipped in keeping abreast of the necessary information to meet all emergencies.

Generally speaking, suppliers and machinery manufacturers have been doing a splendid job in accepting their responsibility by keeping packers and food manufacturers well sup-

plied with the knowledge of changes and scientific developments both in the use of their equipment and in the application of packaging techniques. Undoubtedly their job is going to be a much larger one in the future than it has been in late years.

We have recently had brought to our attention a material that emphasizes the above statement. This is a type of labeling paper or wrapper that is going to get considerable attention in the near future. In connection with its use as a label some of the answers requiring attention are:

1. What is the reaction of the paper when used with different types of glue?
2. Can the paper stand excessive moisture when washing or cleaning after labeling?
3. Can the paper stand fast drying?
4. What type of ink can be used?
5. Will the sheet hold its appearance when shipped or is it easily scuffed?
6. Will the finished surface crack or break under normal or extreme moisture or temperature conditions?

We have already been requested to cooperate in research to help answer some of these questions. This does seem to be one of the simpler problems until you start using the material. However, most of us are well acquainted with the high losses that can result in getting an annual pack of merchandise filled and labeled and find that the labels are not meeting conditions.

The problems involved in the use of many new materials such as plastics, inks, glues, and other materials that will be available as a result of war-time products and experiences emphasize the extreme importance of the technical man who will represent these suppliers and machinery manufacturers. We users are anticipating the suggestions and help of these men who might be termed the "advance" men of the sales force.

Where do the manufacturers of containers stand in connection with private mold designs of glass packages as well as can sizes? It is pretty well agreed that following the close of the war we are entering a period of competition that is going to make necessary merchandising programs to present our merchandise in the most acceptable fashion to attract consumers. There are food packers who have built their business around "being different." As long as there continued a demand greater than the supply, the use of standardized packages did not seriously interfere with the volume. The picture is bound to change — will the container manufacturers be ready to accept this adjustment?

Many new varieties of merchandise will appear on the market in the next few years. Some of the things we manufacturers are dreaming of are:

1. More easily opened tin can.
2. A non-breakable transparent container to replace glass (some plastic manufacturer is going to do this) especially for cold filled merchandise.
3. A bag for carrying dry products that can be vacuumized and one that will hold a vacuum.
4. An attractive, easily removable and reusable cap. (The consumer today requests that this be a screw cap.) We packers of food who insist upon high vacuum have not found the cap that will meet these specifications.

Glass and tin packaging while seemingly well developed as a program deserves more attention. Packaging methods are challenged every time a product is filled into a container and placed in the hands of the consumer. She must be satisfied that she has received good merchandise packed in a satisfactory manner that to her is a good investment. The consumer is the director of the packaging director and should be frequently consulted to be sure that package change reflects progress.

## TECHNICAL SESSION

THURSDAY AFTERNOON, *November 2,*

*Chairman,* T. R. BAXTER, *Manager of Packaging & Package Development, Standard Brands, Inc.*

**Electronic Heating in Packaging:** J. E. JOY, *Engineering Laboratory, Radio Corp. of America.*

A recent development in the electronic field is the welding or fusing of thin thermoplastic materials. This problem was first brought up by manufacturers who were trying to fabricate various articles from these materials. They were trying to make raincoats, tobacco pouches, bags and various other things like that.

At that time they had two methods of welding, holding them together. One was ordinary sewing and the other the use of hot plates or rollers. Sewing is obviously out of the picture if you want a moistureproof package. The use of hot plates and rollers had very serious limitations. Hot plate heating, of course, depends entirely on heat conduction and heat capacity of the material. When you bring hot plates in contact with a material the material naturally will heat from the outside, and the outside will be much hotter than the inside. Lowest temperature is at the seal. If the material has any appreciable thickness we are going to run into trouble because if it is a homogeneous type of material we are going to soften it, we are going to distort the surface, and if the sealing requires the application of pressure, we are just going to extrude some of that stuff out, and we are going to wind up with a weak joint, just where we do not want it.

When we use the electronic heat, we generate the heat within the material itself. We have the highest temperature at the inner face of material. The electrodes themselves, being at room temperature and cool, keep the surface of the material cool by heat conduction from the inside of the material.

It is fairly obvious, if we are going to depend on heat conduction to cool the outside, as our material gets thinner we are going to run into trouble. We are going to reach a point where the heat is going to come out faster than we can put it in. This, in turn, means that for thin materials we will have to increase our electronic power. When we increase our power, we run into the danger of voltage breakdown. It does not take very many volts to jump across a gap that is perhaps one, two or three thousandths of an inch wide.

There is one thing that we can do, and that is to increase the operating frequency. The voltage required at a higher frequency is less to do the same heat job than would be required at a low frequency. The voltage required to do a job varies inversely as the square root of frequency. If we jump the frequency four times, we will cut the voltage in half.

It becomes desirable that we choose very high frequency

equipment. That frequency today, using commercial equipment, is about 200 million cycles, and the power that is available at this frequency is a couple of hundred watts.

Let us take a minute and see what we have here so far. On one hand we have hot plates with their serious limitations. We cannot heat much of anything without burning it up, and perhaps we can do something with very thin stuff, but even then we might have trouble. On the electronic side of the picture we have the means of doing an excellent sealing job of material that has the reasonable thickness of four to fifty or sixty thousandths. But as we decrease the thickness of the material, we run into the fact that we need more power, and we haven't got it right now.

What can we do? We can do this: We can combine the two methods. Instead of running our electrodes at a temperature where they would burn the material, let us drop it to some temperature just below that point and then we will do the actual bonding with electronic heat.

In this way we can overcome, to a great extent, the losses due to heat conduction, and the use of electronic equipment becomes feasible.

One method of induction heating I would like to mention is the sealing of coated metals. I think these materials are used for vapor-proof packing, and particularly for exporting. We have been sealing those things with hot plates and we find that by using induction heating in this case we simply make our hot electrode water cold and it becomes a portion of an inductor coil. In this way we can apply high frequency heating to material for a short time, just long enough to bring the temperature of the bonding agent to where it should be. We can then shut the electronic heat off and then we can still maintain pressure from the cold jaws, which I understand is desirable. You bring it up rapidly, you bring the floor up to temperature and then cool rapidly, and in that way manage to get a satisfactory seal.

QUESTION: Has it been determined how fast or at what speed packages can be sealed by this method?

MR. JOY: The speed at which we can seal a package depends entirely on the amount of power available and how large a package, of course. As an example, I might say that with the equipment that we have here and the power that we have, we could make a seal three or four inches in length and one eighth of an inch in width in less than one second; one-half second is about the time. We could increase the length of that seal up to perhaps eight or nine inches before we run into electrical troubles due to voltage distribution.

If we are going to want to make a long seal, it seems practical to replace our flat electrodes with a pair of rollers between which we can pass our material. In this way we are heating a very small quantity at any one instant and the power that we have available will go much farther.

QUESTION: In connection with the method that you just displayed there, I wonder what part the matter of pressure would play in the average material. For instance, in a square package that had to be wrapped with the material in question, how would you get your electrodes underneath the final seal in the case of wall closures?

MR. JOY: Electronic heating does not mean necessarily that the electrodes have to be on opposite sides. There are any number of ways of arrangements that could be worked out. We could do it, perhaps, with both electrodes on the same side or one electrode on a common ground.

QUESTION: Let us suppose you have a box of crackers which you want to put an inner liner in. Could that inner liner be sealed after the box is closed without the necessity of pressure so that you would crush the contents?

MR. JOY: It is not the electronic heat that requires the pressure. If your material is such that when you heat it it will stick together automatically, all right.

QUESTION: Could you give us an indication of the speed with which you can seal a continuous seal?

MR. JOY: At this particular frequency, 200 megocycles, we can seal at the rate of somewhere between 15 and 20 ft. per minute.

QUESTION: May I ask whether with that instrument, as set up, the frequency is tunable so that you could take most of the known thermoplastic materials which will heat-seal?

MR. JOY: Yes. That is a laboratory instrument, of course, and we had that in mind when we built it. We can handle with this gadget here materials ranging from say 3 mils up to perhaps 50 or 60 by tuning, which is accomplished with tuning stubs in the back here (indicating).

QUESTION: Can a package be sealed and its contents sterilized in the same operation?

MR. JOY: Yes. But why? You have to think of that as two separate operations. Your sealing operation probably requires a quarter of a second. I don't think you would do much sterilizing in that time. You would need more power for your sterilization problem. I would say it calls for two equipments.

**Testing Plastic Closures:** GEORGE K. SCRIBNER, *President, Boonton Molding Co.*

[Past and proposed methods for measuring the strength of plastic closures were reviewed by Mr. Scribner, and the characteristics of various plastic materials suitable for closures were described. Cap breakage was analyzed and a means suggested for classifying according to methods of application. Mr. Scribner's complete paper, with illustrations, will be printed in the Technical Section in the December issue of MODERN PACKAGING.]

**Measuring Gas Transmission Through Organic Films:** DRS. L. E. HOAG and C. A. NEROS, *Research Dept., American Can Co.*

[Speaking informally, Dr. Hoag gave a report on basic research in his laboratory on modified methods of measuring the transmission of various gases through flexible films. The research differs from previous work in that it compares the transmission rates of gases when dry and wet; it differs also somewhat in the type of equipment used. Dealing with such gases as nitrogen, carbon dioxide, oxygen and hydrogen, general behavior patterns of these gases — both wet and dry — on various thicknesses of ethylcellulose film were traced. A complete, illustrated report on a concurrent work in this laboratory by Dr. H. Russell Todd will be carried in the Technical Section of the December issue of MODERN PACKAGING, and the work of Drs. Hoag and Neros will be similarly reported when it is completed.]

# When Only Bad Girls Smoked

It is not long ago that the cigarette was considered a sissy smoke even for men,. and any woman who smoked in public could only be a bad woman.

By the same token, women were afraid to admit to the use of cosmetics. When they used them they did so privately. There were few preparations on the market.

F. N. BURT packages have played a big part in breaking down the old taboo. When today's lovely ladies rouge their lips or touch up their eyelashes, chances are they do so out of a BURT container.

We specialize in making large quantities, by automatic methods, of small, round, oval and square set-up packages.

We shall be happy to serve your needs.

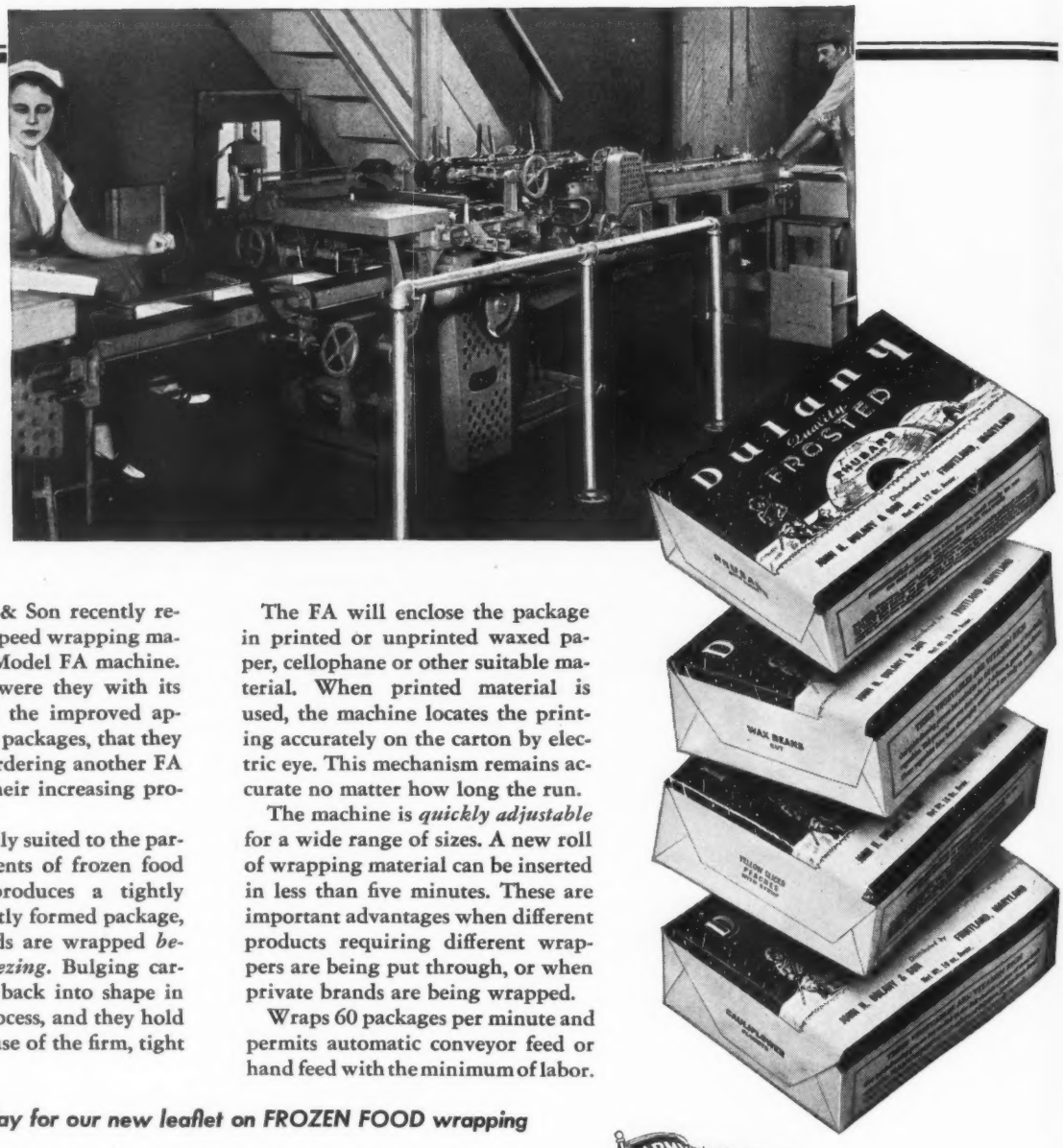
**F. N. BURT COMPANY, INC.**

**500-540 SENECA STREET, BUFFALO, N.Y.**

New York City - Kansas City - St. Louis - Atlanta - Chicago - Los Angeles - Boston - Cleveland
Cincinnati - Memphis - New Orleans - Minneapolis
SAN FRANCISCO: 220 Bush Street, Yukon 0367
NEWARK, N. J.: 915 Military Park Bldg. Telephone Market 3-0788
CANADIAN DIVISION:
Dominion Paper Box Company, Ltd., 468-483 King Street, West, Toronto 2, Canada

# Dulany Speeds Up FROZEN FOOD WRAPPING

## with our FA model




John H. Dulany & Son recently replaced two slow-speed wrapping machines with our Model FA machine. So well pleased were they with its performance and the improved appearance of their packages, that they lost no time in ordering another FA to take care of their increasing production.

The FA is ideally suited to the particular requirements of frozen food packaging. It produces a tightly sealed and perfectly formed package, whether the foods are wrapped *before* or *after freezing*. Bulging cartons are pressed back into shape in the wrapping process, and they hold their shape because of the firm, tight wrap produced.

The FA will enclose the package in printed or unprinted waxed paper, cellophane or other suitable material. When printed material is used, the machine locates the printing accurately on the carton by electric eye. This mechanism remains accurate no matter how long the run.

The machine is *quickly adjustable* for a wide range of sizes. A new roll of wrapping material can be inserted in less than five minutes. These are important advantages when different products requiring different wrappers are being put through, or when private brands are being wrapped.

Wraps 60 packages per minute and permits automatic conveyor feed or hand feed with the minimum of labor.

***Write today for our new leaflet on FROZEN FOOD wrapping***

PACKAGE MACHINERY COMPANY
Springfield 7, Massachusetts
30 Church St., New York 7 • 111 W. Washington St., Chicago 2
101 W. Prospect Ave., Cleveland 15 • 443 S. San Pedro St., Los Angeles 13
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ARMY E NAVY

**PACKAGE MACHINERY COMPANY**

**Over a Quarter Billion Packages per day are wrapped on our Machines**

# New vinyl packaging materials

*by M. Scott Moulton**

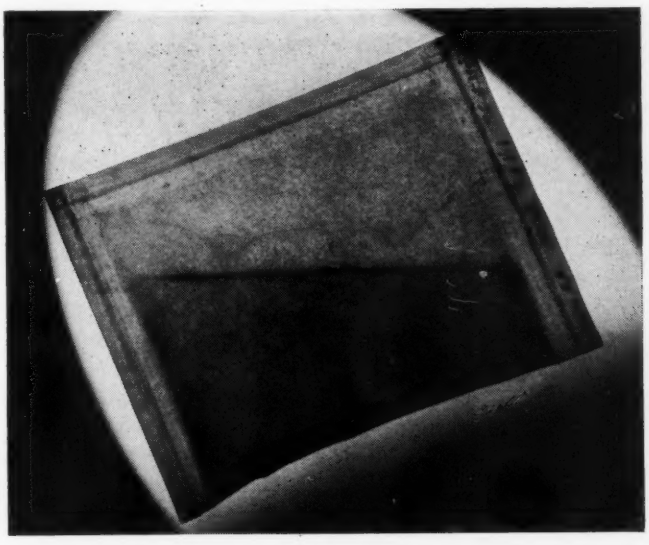
New vinyl resins recently announced[1,2] provide new packaging materials, of interest not only because of the combination of advantageous properties which they possess but also because of the simplified processing techniques they make possible.

The use of these resins for packaging is relatively new, but a comparison of their properties with those of accepted products indicates that they possess a combination of qualities untouched by any other one substance. It is true that the resistance to water-vapor permeation of films made from Geon (trade name of the B. F. Goodrich Co.) is, at present, inferior to that of several other materials, yet this value (1.5 to 3.0 grams per 100 sq. in. per 24 hrs.) is sufficiently good to be acceptable for a majority of applications, and in other properties which are of definite importance, Geon plastics exceed established packaging materials. Among these qualities is an exceptional resistance to deterioration upon aging. This includes resistance to both heat-promoted decomposition occurring during processing and long-time breakdown due to the effects of sunlight and oxygen. A package made from Geon will afford as much protection ten years after fabrication as the day it was created.

Geon resins can be plasticized to any degree of hardness, or to provide permanently flexible products over a wide range in temperature. They are extremely resistant to the action of greases, oils and other hydrocarbons and to almost all the corrosive chemicals including both acids and alkalies and chemicals which act as oxidizers. It is unlikely that anyone will want to package hot aqua regia in Geon, but this is not beyond the capabilities of the material. Films which do not block below 180 deg. F. and yet are readily heat sealed as low as 250 deg. F. are easily prepared from Geon materials.

Physically, Geon plastics show high tensile strength and good elongation. They exhibit unusual resistance to abrasion, and in this respect are considerably better than rubber or leather under conditions where heat is not a serious factor. Their tear resistance as measured by the Elmendorf test is at least 30 grams per mil of thickness. When compounded with materials which are in themselves acceptable, Geon resins are tasteless, odorless, non-toxic or non-flammable, and are not deteriorated by fungi.

When suitably plasticized, these resins are adaptable to all packaging fabrication processes except the hot-melt technique. They can be spread on paper or fabric either by means of a ketone solution or as a latex which contains no organic solvents whatever. They can be used for impregnations to provide sealants with considerable resiliency; and there is the possibility of incorporating them in paper stock during its formation either via the beater or by application at the press roll. They can be formed into unsupported film by casting from a solution or from a latex, and can be converted into unsupported film or applied to paper or fabrics by hot calendering methods.



**1**—*Heat-sealed test package, fabricated from Geon-coated paper, has contained motor oil for more than three years without any effect on the package or the contents.*

The name Geon designates the vinyl resins manufactured and sold in raw material forms by the Chemical Division of the B. F. Goodrich Company, and at present includes two grades (100 series) of polyvinyl chloride, two copolymers of vinyl-vinylidene chloride (200 series) and a latex of vinyl chloride type resin.

The 200 series vinyl-vinylidene copolymers differ from the straight vinyl chloride polymers in being somewhat more thermoplastic and more soluble in ketonic solvents. Both of these factors, particularly the latter, are of importance in the packaging industry where an increase in the solids content of a casting solution reflects itself in lowered cost. The copylymer resins are slightly weaker physically and of course have lower heat distortion values than does 100 series polyvinyl chloride.

The water-borne resin, Geon latex, is of particular importance to convertors because of its processing qualifications. It makes possible a coating or casting mixture of over 50%

* Technical Service Engineer, Chemical Division, The B. F. Goodrich Co.
[1] MODERN PLASTICS, page 83 (June 1944).
[2] MODERN PLASTICS, page 105 (Nov. 1944).

solids and one which does not contain or demand organic solvents. This represents a definite economy due to elimination of solvent costs and reduction of insurance rates. In many cases, construction of a solvent recovery system (which at best is expensive) or of safe processing equipment for use with solvents is not possible, and use of a water-dispersed system provides the only method of applying materials which cannot be heat-flowed into place.

In order to convert the resins to plastic materials it is necessary to incorporate a suitable plasticizer. This may be accomplished by addition of the plasticizing agent to the solid resin either on a rubber mill or in a mixer such as a Banbury. In the case of resin solutions the plasticizer is added directly, whereas with resin latices it is generally incorporated as a water emulsion. Other formulating ingredients are color and loading pigments and stabilizers. Waxes may be used as processing aids for calendering operations or to decrease MVT.

Conversion of these various Geon resins into forms suited to packaging may be accomplished in several different ways. Unsupported film greater than 4 mils thick and coated paper or fabrics may all be prepared by use of a proper calender. For this type of operation the straight vinyl chloride polymer, Geon 100 series, is generally preferred. When thinner gauge films are desired they are prepared by casting operations either by use of ketone solutions of the solid 200 series copolymer resins or by deposition from Geon latex.

Calendering of the 100 series resins is performed at temperatures of 300 deg. F. or higher, depending upon the specific plasticizer involved. If these temperatures are not feasible because of power plant limitations or inadequate bearing lubrication, use of the 200 series copolymer resins permits processing at temperatures of 260 to 280 deg. F.

Since Geon resins are thermoplastic, batch stocks must be prewarmed and held to temperature as they are fed to the calender.

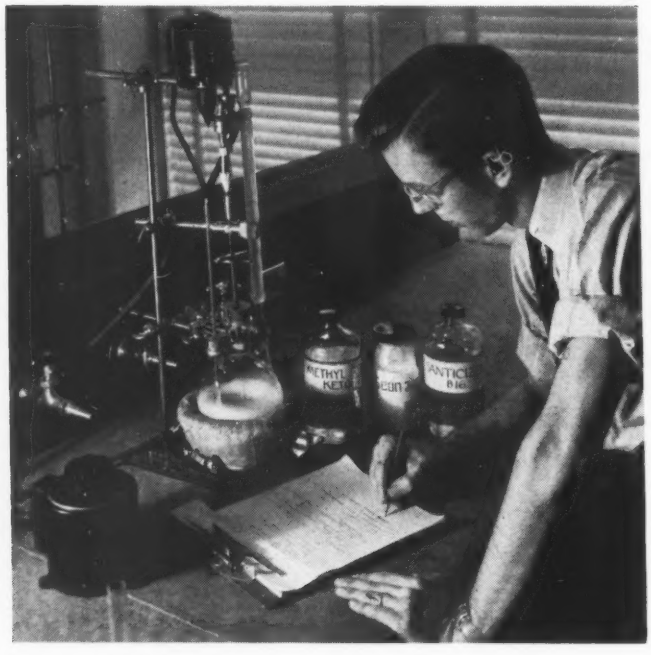
In the preparation of solutions of the resins, methyl ethyl ketone and cyclohexanone are perhaps the most common solvents. If processing equip- (*Continued on page 166*)

TABLE I—PROPERTIES OF GEON FILMS

| | | |
|---|---|---|
| Specific Gravity | | 1.25–1.35 |
| Tensile Strength | Lb./In.² | 1500–6000 |
| Elongation | Per cent | 80–500 |
| Tear | Grams Elmendorf at 1 Mil | 30 |
| | Grams Elmendorf at 2 Mils | 75 |
| Bursting Strength | Lbs./Sq. In./Mil Thickness | 7 |
| Shrinkage | At 80° F. for 2 Hours | None |
| Blocking | Spec. P.Q.D. 438 (4 Lb. Pressure, 30 Minutes at 180° F.) | No Adhesion |
| Burning Rate | | Self-Extinguishing |
| Resistance to Heat | | First Evidence of Discoloration at 275° F. after 2 hours |
| Resistance to Cold | | Flexible at −60°F. |
| Heat Loss | | Dependent upon Plasticizer |
| Resistance to Ozone | 96 Hours at Room Temperature | No Effect |
| Resistance to Oxygen | 2400 Hours at 158° F. and 300 PSI | No Effect |
| Resistance to Weatherometer | | Discoloration after 8 Hours (without Stabilizers) |
| Water-Vapor Permeability | Grams/100 Sq. In./24 Hours | 1.5 to 3.0 |
| Resistance to Abrasion (3 Oz. coating on paper) | Taber Abraser CS-10 Wheel (1000 grams wt., 2000 revs.) | No Effect |
| | H Wheel (1000 grams wt., 2000 revs.) | 0.077 Gram Loss |

***2**—Laboratory preparation of a Geon solution illustrates application of heat and agitation. Santicizer B-16, added directly to solution, is non-toxic. **3**—Plasticizer is blended with latex in simple stirring operation.*

2



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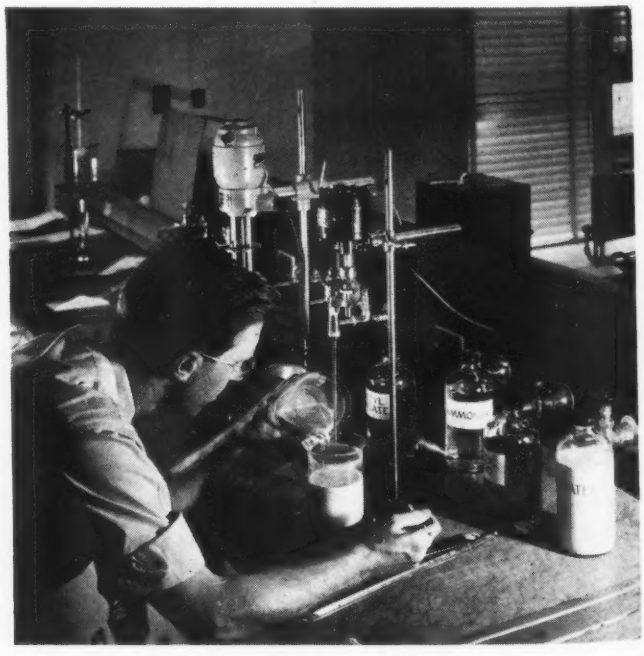


# Filming tinplate

## . . . a new rust-prevention method

by Bruce W. Gonser*

Tin makes an excellent, attractive and economical coating on steel. The resultant tinplate is well recognized by the packaging industry, where it has proved its merit in making sturdy containers for foods and a multitude of other products. Probably the most amazing thing about such containers is the thinness of the tin coating. Before the war, it was about 0.00009 in. Now the normal hot-dipped product is less than 0.00008 in., and electro-tinned plate may go all the way down to 0.00001 in., although three or four times this thickness is more common.

Though new tinplate seems to be covered perfectly with tin, there are a number of microscopically fine perforations or pinholes in the coating. In general, the thinner the coating, the more pinholes are present. Thus, they may vary from less than 100 per sq. in. in good hot-dipped plate to more than 1,000 per sq. in. in some of the thinner electro-coatings.

These imperfections may not cause concern on the interior of the container with many products because of the absence of air, galvanic protection by the tin, presence of tin salts and other factors. The outside, also, does not rust appreciably if kept dry, but under moist conditions specks of rust soon appear at the pinholes and mushroom widely over the surface. With more exposed iron from very thinly coated tinplate and more corrosive conditions in transoceanic shipment, and in even temporary storage in humid localities, the problem of rusting of tinplate has become increasingly important. It is not just appearance that is affected; complete perforation of the tinplate may result if corrosive conditions persist for long.

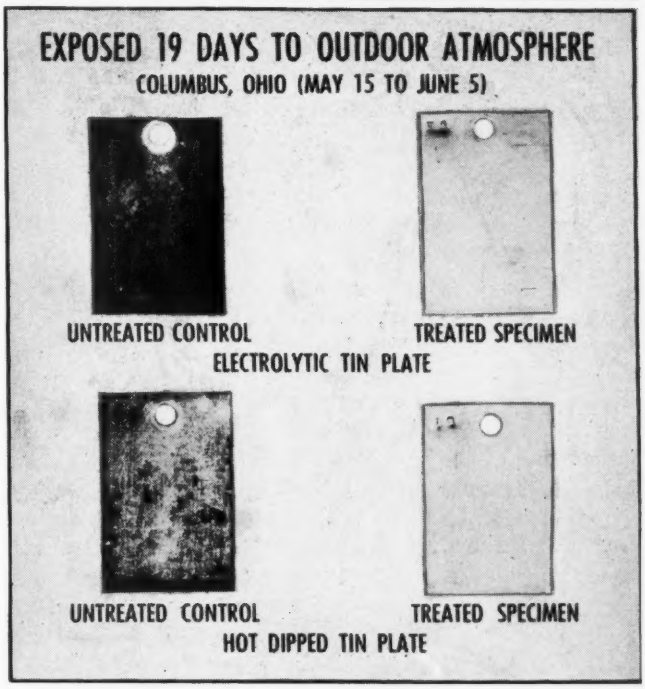
A common means for preventing rust on the outside of tinplate containers has been to coat them with an "outside enamel," such as a baked thermosetting phenolic can lacquer. This has one point of weakness in the thin strip down the side seam of most containers where a bare strip has been left to permit soldering. By striping after soldering, this can be protected, but it is not a convenient operation. During the past year, many food containers have been protected from rusting by "pro-coating" or dipping in a quick-drying lacquer after the contents have been processed. This has been entirely for overseas shipment. Dipping the container in certain wax emulsions also is effective.

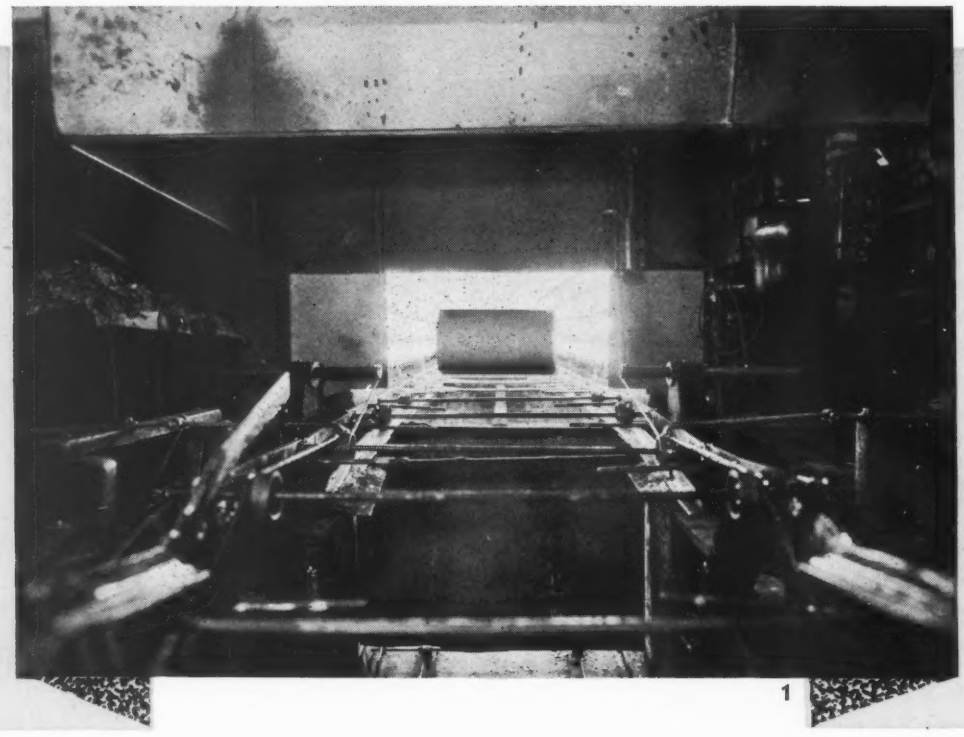
Recently, a simpler, less expensive process has been developed by the Tin Research Institute whereby the cans are momentarily dipped in a hot alkaline solution of salts which cleans the surface and produces an invisible film over the tin. This resists weathering or humid conditions remarkably well.

The exact nature of the protection is not definitely known. Since the same treatment on uncoated steel is comparatively ineffective, the inhibition of corrosion at the pinholes is evidently caused by the closed proximity of the treated tin. However, similarly treated lead coatings give similar results; hence, the presence of tin does not seem to be essential. Regardless of the mechanism, pinhole corrosion is effectively inhibited and treated cans or tinplate panels stay bright and clean after months of outdoor exposure whereas untreated specimens rust badly in a few days.

Tinplate can be treated in (*Continued on page 164*)

*Battelle Memorial Institute, Columbus, Ohio.





1

# Infra-red heating . . . its place in packaging

*by Paul H. Krupp**

Heating and drying by infra-red ray, which has found a multitude of time-saving applications in many industries, also has its place in packaging. Specific uses established in war packaging will be broadened in postwar operations.

A comparatively new tool, radiant energy from the infra-red ray, is being used to dry a variety of coatings on paper and metal, to set glue, to dry printing inks, to dehydrate moisture and to preheat prior to certain auxiliary operations. In many cases it does a better job faster and increases production by as much as 100%.

Radiant energy is developed by electric filament lamps in the same manner as light rays emitted by the regular incandescent lamp. The only difference is in the wave length of the ray.

Infra-red rays occur in that portion of the electromagnetic spectrum between the visible or light rays and radio waves. Radiant energy is developed at wave lengths from 7,800 to 28,000 angstrom units. Maximum energy is emitted by the waves when they are from 11,000 to 14,000 angstrom units; therefore the infra-red equipment used in industry is generally designed to provide waves at those lengths.

When the radiant energy waves travel through the air and are directed on material substances they are quickly absorbed and transformed into usable heat. It is not necessary to provide a physical conductor. Neither is it necessary to provide a high ambient temperature to act as a conductor.

Once the infra-red rays are developed by the filament lamps, the important consideration is the collection and direction of the rays onto the material to be processed. This calls for properly designed reflectors to assure that the energy will reach its intended destination with minimum loss. So far, properly contoured gold-plated reflectors are recognized as the most efficient for controlling radiant energy.

One of the important war applications has been in the rapid baking of lacquer and paint coatings on metal containers to give a stronger, longer-lasting protective finish. Steel drums and cans designed to carry supplies of oil, water and gasoline to the fields of battle are getting finish coats baked in this way.

An accompanying photo (Fig. 1) shows one of the drum baking tunnels at the Draper Co., Cleveland. It will handle a box-car load of 50-gal. drums every hour. Similar installations are in operation at the Rheems Manufacturing Co., Oakland, Calif. (Fig. 2), and the Electric Metallurgical Co., Ashtabula, Ohio.

"Blitz" cans, extensively used for carrying auxiliary supplies of gas, oil and water for jeeps, trucks, etc., likewise have finish coats baked by radiant energy. Fig. 2 is a photograph of the installation at Conco Engineering Co., showing the cans as they emerge from the tunnel after the prime coat has been baked. A finish coat is also baked—a total of $6\frac{1}{2}$ min. total baking time being required for both coats, as compared to 45 min. by previous methods.

An unusual application for infra-red was found recently at the Hiram Walker distilleries. To make sure that "K" ration packages reach our fighting forces in good condition it is necessary to coat the entire package with two coats of wax. This precaution assures that air and moisture will not reach the contents.

Instead of being used to dry the wax coatings, as might

* Fostoria Pressed Steel Corp., Fostoria, Ohio.

be expected, the infra-red lamps at Hiram Walker are employed to melt wax from the moving parts of the dipping conveyor. Failure to keep the wax drippings melted would soon result in such an accumulation that the operation would have to be shut down until the machine was cleaned.

After the "K" packages are scientifically packed with food, cigarettes, candy, gum, etc., they arrive at the coating station by conveyor belt. The first tank of wax into which the packages are carried is maintained at a temperature of 190 deg. F. As it comes out into the air, wax on the package sets sufficiently to allow the application of another coat in a second tank where the temperature of the wax is maintained at 175 deg. F. The accompanying photos and sketches (Figs. 6 and 7) illustrate the several points in the coating operation where radiant energy is used.

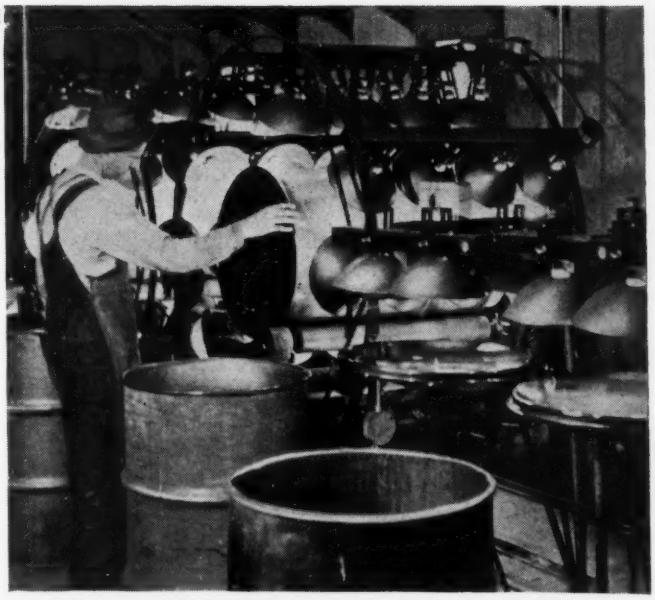
Many infra-red installations benefiting civilian operations were already being utilized before the war. Many of these helped speed the production or lowered the cost of materials.

The Ben Mont Paper Co., Bennington, Vt., was concerned with the drying of inks on gift wrapping paper. Infra-red equipment installed on their press nearly doubled production. They are now able to turn out 500 ft. of wrapping paper per minute, as compared to 280 ft. per minute with a convection drying system. As can be seen by Fig. 5, the infra-red equipment is mounted over the travel of the paper, after the inked designs are impressed.

At the Springfield Coated Paper Corp., Camden, N. J., radiant energy was used to drive off excess moisture from glue and set it after application between two sheets of paper—one coarse and the other smooth finish. Thus a problem was solved and a superior box produced.

From the accompanying sketch (Fig. 7) it can be seen how the coarse paper unrolls and is carried through the glue

2



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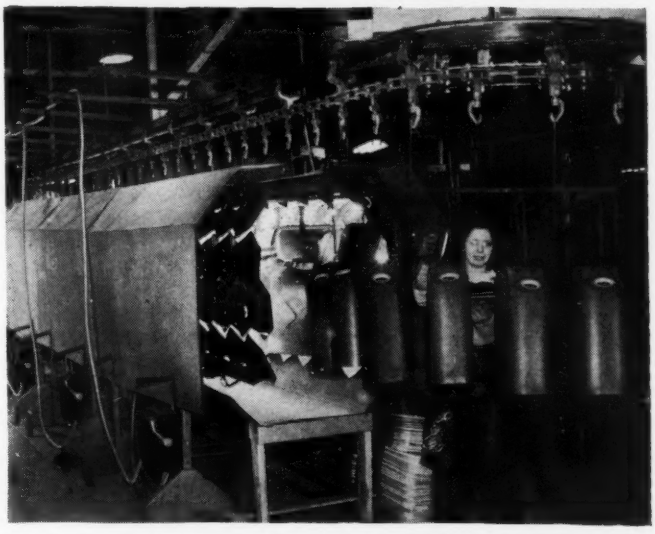

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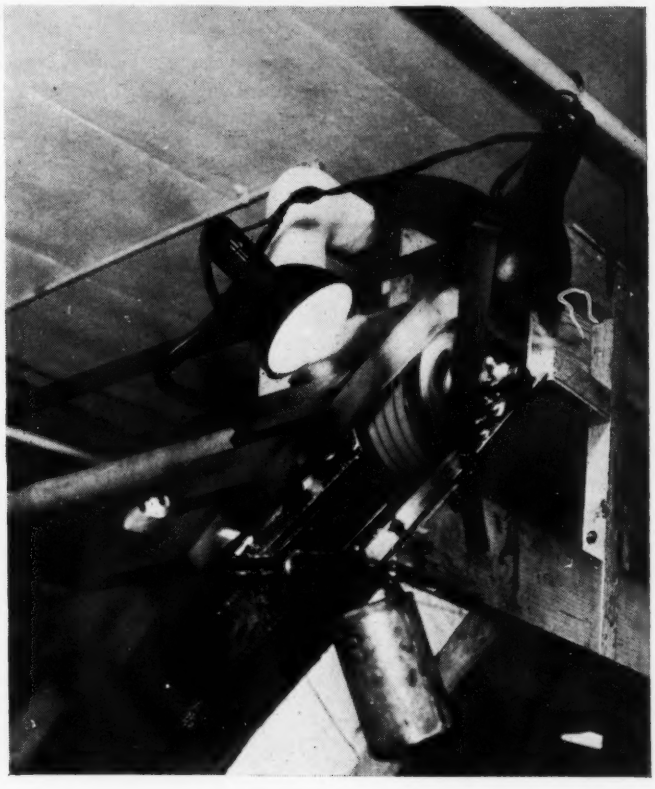
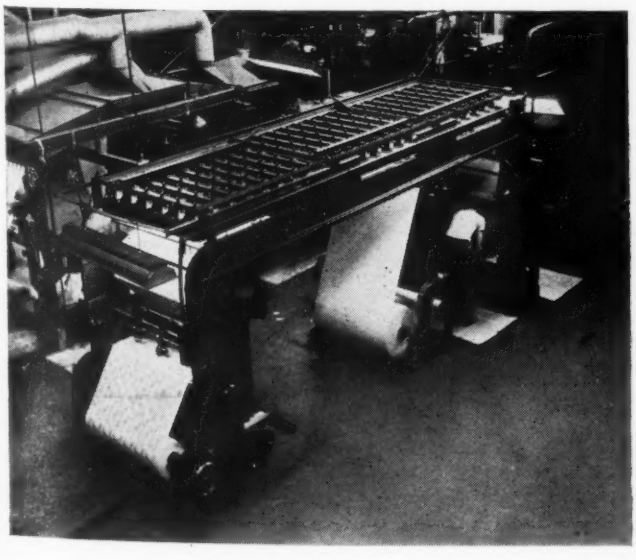
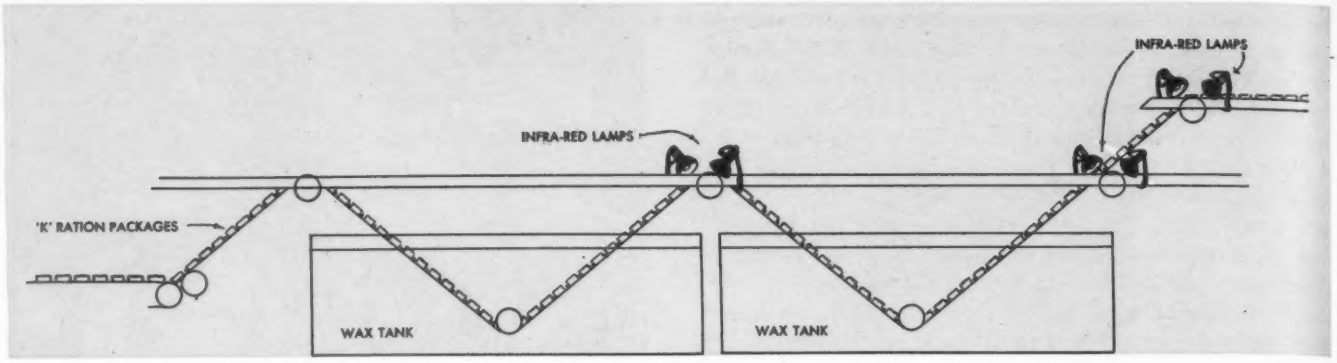


***1**—Infra-red equipment bakes protective coatings on steel drums and cans. Baking tunnel at Draper Co. will handle box-car load of 50-gal. drums per hour.* **2**—*Another type of equipment for drums in use at Rheems Mfg. Co.* **3**—*Army's ubiquitous "blitz" cans conveyed through drying tunnel at Conco Engineering Co.* **4**—*Close-up of lamp installation on Ration "K" wax-dipping equipment at Hiram Walker distilleries. Lamp keeps wax drippings melted off moving parts, avoids shutdowns for clean-up.* **5**—*Battery of lamps atop press at Ben Mont Paper Co. speeds drying of inks on gift wrapping paper, has nearly doubled production.*

5






6

trough. The infra-red rays drive off excess moisture from the glue after it is applied to the coarse paper and just before the smooth finish paper meets it to become laminated into one finished sheet. The dehydration occurs in a flash.

Prior to this installation the moisture in the glue became trapped between the sheets and caused buckling and wrinkles.

The Sealright Co., Kansas City, manufacturers of milk bottle caps, installed infra-red equipment on their presses. These presses in addition to printing the caps also die-cut them. With infra-red they are able to print 450 ft. of 18-inch-wide stock per minute, and the ink is dry when it reaches the delivery end of the press.

When the WPB drastically limited the use of new metal bottle caps, infra-red was found advantageous for drying protective coatings of either clear lacquer or other finishes on reclaimed caps.

Toothpaste manufacturers have found infra-red advantageous in the handling of collapsible metal tubes. The Andrew Jergens Co., Bellville, N. J., had difficulty with the paint chipping on their tubes at the time of sealing. By preheating the tubes for five seconds, the difficulty was eliminated.

The Pepsodent Co., Toronto, discovered that a wax coating inside their toothpaste tube did not flow properly when the jaws of their closing machine were cold. A single radiant energy unit mounted close to the jaws on each machine provided sufficient heat to keep the tubes at one constant temperature and eliminated all trouble.

An ink-drying installation of benefit to candy manufacturers generally may be observed at Peter Paul, Inc., Naugatuck, Conn. A few infra-red units are installed on the special presses which print the attractive cellophane candy wrappers, to afford quick drying of the ink and eliminate any possibility of offset.

The manufacture of cellophane is itself benefited by radiant energy. At least one manufacturer uses a large amount of infra-red equipment for drying operations, which are considered somewhat secret.

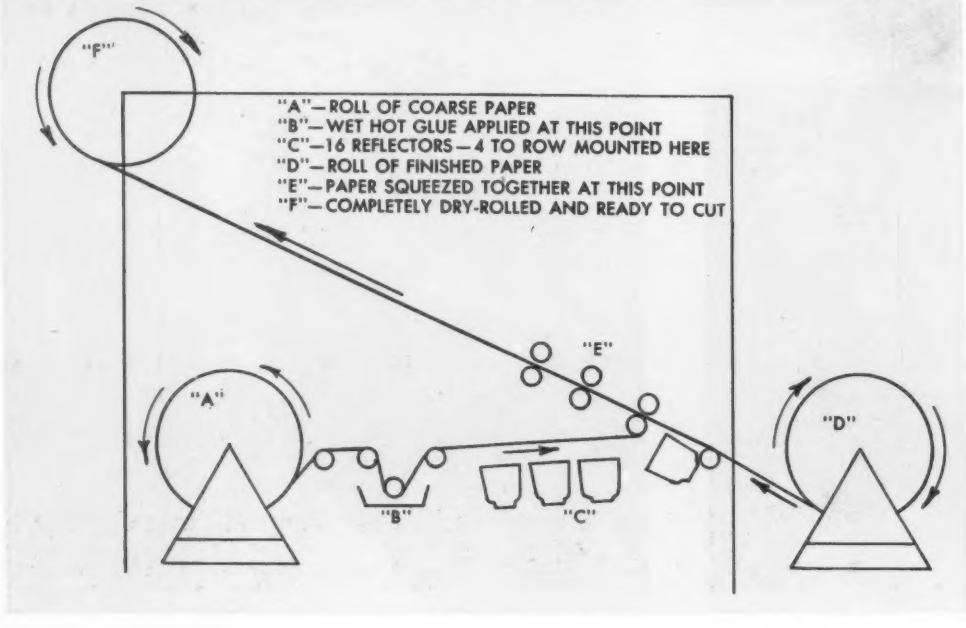
Kirkman & Sons, division of Colgate-Palmolive-Peet, use infra-red for drying glue on the paper tops of cleanser cans, to fasten them to the can body. Drying time has been reduced from five minutes to 20 seconds.

The Berkowitz Envelope Co., Kansas City, replaced gas drying equipment with infra-red for drying the mucilage on envelopes and printed stickers. The process is used for similar operations in many plants.

At the Bliss Syrup & Preserving Co., Kansas City, infra-red is used to preheat glass jars prior to filling. This simple little operation has eliminated breaking of the jars, and thus conserves both jars and food. The infra-red equipment is mounted over and under the conveyor which carries the jars along the production line.

Radiant energy can be used very effectively for drying decals on products or packages.

To eliminate mildew of certain cereals after packaging, some manufacturers have found it advantageous to heat their products as well as the container prior to packaging. Infra-red has been effective for these operations because of the ease of control which it permits. The radiant energy serves to drive off excess moisture and assures that the product will stay fresh longer.




7

*6—Diagram of Hiram Walker installation shows points at which infra-red lamps are used.* **7***—Diagram shows how infra-red is used at Springfield Coated Paper Corp. to dehydrate glue coating prior to lamination of two sheets.*

# . . . garnish with maraschino cherries

When the recipe reads like that, it's time to get out the bottle of Liberty Maraschino Cherries and start decorating.

These luscious, full-bodied cherries are prepared and distributed by The Liberty Cherry & Fruit Co., Inc., Covington, Kentucky.

Crown Screw Caps are used on the bottles in which Liberty Maraschino Cherries are packed. The patented Deep Hook Thread—an exclusive feature of all Crown Screw Caps—provides 50 to 100% more sealing pressure with the same amount of application force.

**CROWN CORK & SEAL COMPANY**

*Closure Division* • *Baltimore-3, Md.*

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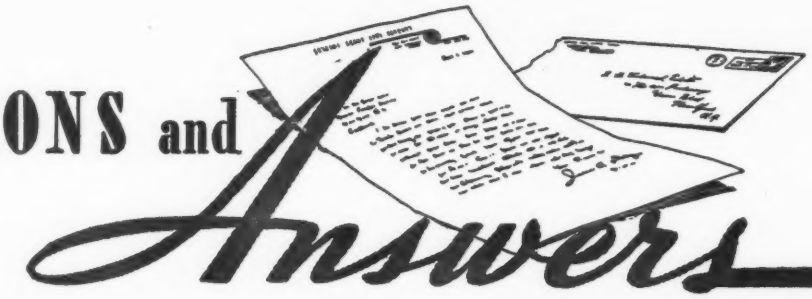
**CROWN CLOSURES**

# QUESTIONS and Answers



***This consultation service on packaging subjects is at your command. Simply address your questions to Technical Editor, Modern Packaging, 122 East 42nd St., New York 17, N. Y. Your name or other identification will not appear with any published answer.***

## Preserving recording paper

*QUESTION: We are interested in preserving a pressure- and heat-sensitive wax-coated paper which we use in certain recording instruments for measuring thickness of thin films.*

*This recording paper consists of a red paper with a waxy coating on one side on which has been superimposed a white pigmented film. Pressure on the white coating leaves a red line, and heating, sufficient to soften the wax, causes the whole surface to become red.*

*Can you give us any suggestions on how to preserve this paper for our permanent records?*

ANSWER: The color change of this paper can also be brought about by contact with solvents, since it depends upon the wetting of a solid. Therefore, it would not be possible to lacquer these records for preservation; however, reasonable permanence so far as reducing pressure sensitivity, etc., could be achieved by the use of transparent pressure-sensitive tape, as—for example—Scotch Tape.

You could probably obtain special sheets of material of this type from the manufacturer and by applying it very carefully with a soft roller on both front and back, you should obtain a fairly durable lamination for your records.

## Weather proof sealing

*QUESTION: We are using cloth-backed tape which we have had in stock for a long while for the closing of small solid-fibre weatherproof cases. We have received complaints of the tape lifting or disintegrating from brief outdoor exposures. Why does this occur?*

ANSWER: Apparently you are not sure of the age or the specification of this lot of tape and it may be that you are inadvertently using a pressure-sensitive tape which is not a waterproof type. It is also possible that this tape has been in storage a long time, perhaps exposed to excessive heat and has deteriorated to the point where it will not stand wetting, etc. It is suggested that you obtain a new lot of tape of the type approved for outdoor use, which is the so-called waterproof type. Such tape is made by all of the important suppliers and manufacturers of pressure-sensitive materials.

## Paper pots for tomatoes

*QUESTION: I am interested in packaging tomato plants in paper pots in dozen lots in a small shipping carton. There is a possibility also that larger units will also be necessary. I would appreciate suggestions as to construction details and type of board, etc.*

ANSWER: There are several possible constructions of the individual paper cups suitable for the tomato plants themselves and for these units the paper stock should be of a type which would disintegrate after a period in the ground but which should be sufficiently durable to withstand shipping and handling before planting. The case or carton holding a dozen units probably should have some wet strength either from laminations, resins or dry wax treatment at least covering the lower portion of the carton. You will probably also require some special design for locking in the dozen units and a shape which will prevent the box from being turned upside down. I suggest that you discuss this problem with some of the progressive box board companies who have had experience in paper flower pots, etc., and the construction and design of such shipping cases. You should also appreciate the fact that you may not be able to obtain the best possible wet-strength papers or boards for this application until the end of the war.

## Moisture proofing a hygroscopic product

*QUESTION: We package a concentrated food product containing sugar, acid and flavor concentrate in a folding carton with a dry-waxed liner. This package has given us good results near our packing plant in the Southwest but our returned goods are very large when we ship into other areas. Can you recommend a better or stronger package?*

ANSWER: Your product is probably very hygroscopic and becomes unusable with small moisture gains. Also your package gives very little moisture protection. Were it not for the general low humidities in the Southwest portion of the country around your plant you would have appreciable returns from this area. However, when you ship your product out of this low humidity area, the package is insufficient to protect the contents for a normal shelf life. The simplest means of correcting this is to add a moistureproof overwrap, such as waxed paper, cellophane or lacqured glassine. You could also improve the protective qualities of the package by using a moistureproof type of liner instead of the dry waxed. In this case, you should be sure that your liner is heat sealed or made as mechanically tight as possible. Either of these changes will decrease your returned goods from areas away from your plant.

You've got to See
TO FIGHT THIS WAR...
AN ARMY on the move kicks up a heavy surf of dust. To protect soldiers' eyes against this blinding menace, the Army has issued a newly perfected eye shield, made of Eastman Acetate Sheet. Shaped to fit tightly, the eye shield gives good protection, while the outstanding optical qualities of Eastman Acetate Sheet keep the soldiers' "seeing" free from distortion.
...and you've got to See
TO KEEP PRODUCTION MOVING
HERE'S a note for your file of postwar ideas: Face masks of Eastman Acetate Sheet have found wide acceptance in wartime industry. Similar to the military eye shields, they provide real protection in many operations which do not require heavier and more elaborate safeguards.

EASTMAN ACETATE SHEET can be scored, folded, pleated, molded, or drawn. It can be sewed, crimped, or stapled and it takes printing inks without wrinkling. Three standard types of Eastman Acetate Sheet are produced in sheets or rolls: Clear Transparent, Matte Translucent, Colored Translucent. Right now, of course, all production of Eastman Acetate Sheet is devoted to essential war needs. But it will be again available for civilian use . . . and you'll want to include it in your postwar packaging and production program. For detailed information, write to the Chemical Sales Division, Eastman Kodak Company, Rochester 4, N. Y.

**Get a head start in postwar products and packages**

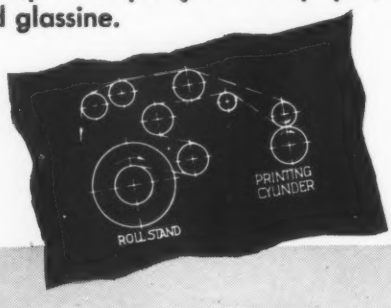
TO be ready for swift conversion to peacetime products and packages, you may wish to send some of your staff to the Kodak Packaging Laboratory for a refresher in fabricating operations. Kodak experts will be on hand to help.

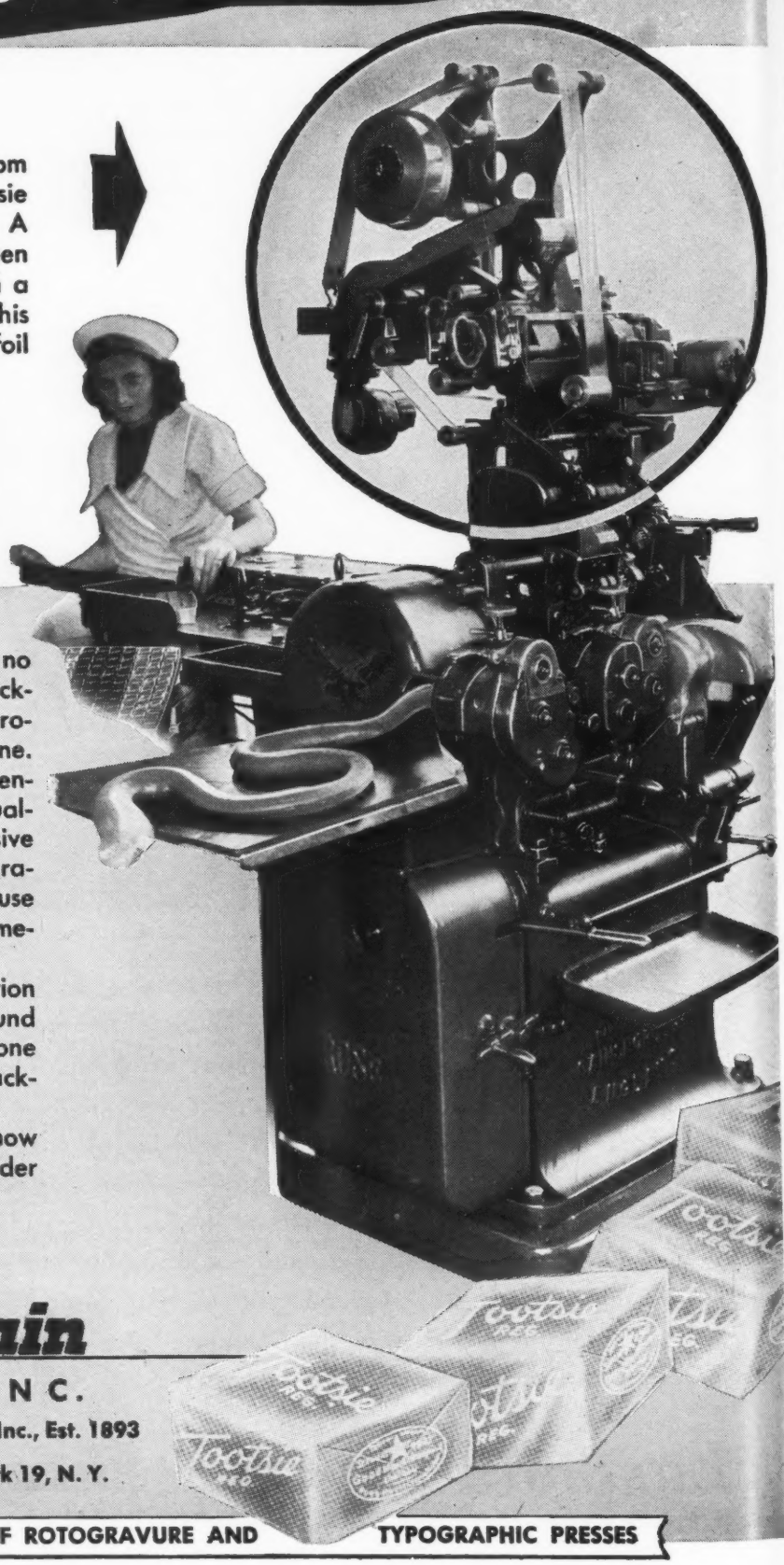
***Eastman Acetate Sheet***

*attracts*
*protects*
*sells*

# PLAN NOW FOR POST WAR TO PRINT AS YOU PACKAGE

It's one continuous operation from a roll of plain cellophane to "Tootsie Caramels" ready for packaging. A Champlain rotogravure press has been mounted on and synchronized with a Rose Caramel wrapping machine. This press prints equally well on paper, foil and glassine.



Printing is produced at almost no expense when you "Print As You Package" with a Champlain press synchronized with your packaging machine.

The Patented Speedry wholly enclosed ink fountain, essential for quality automatic printing, is an exclusive feature of these Champlain rotogravure presses. It makes possible the use of highly volatile inks which dry immediately.

Printing is automatic and operation is simple. The roll of stock is unwound from a stand and travels through one or more printing units into the packaging machine.

Priority orders are being taken now for post-war delivery. Write for folder entitled "Print As You Package."

**Champlain**
**COMPANY, INC.**

*An Affiliate of* The Fred Goat Co., Inc., Est. 1893

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MANUFACTURERS OF ROTOGRAVURE AND TYPOGRAPHIC PRESSES

# Over 75% of all overseas war shipments go in modern engineered WOODEN BOXES

**War record proves** Army-Navy-Maritime men charged with getting 700,000 fighting items to fighting fronts have found answer to shipping container problem in modern engineered wooden boxes — they pack over 75% of them in wood!

**Their problem:** to meet new, extreme, war-bred packing conditions — *to protect* weighty tank, gun, aircraft parts . . . fragile electronic equipment . . . perishable foodstuffs . . . temperamental explosives against shipping hazards of desert, swamp, jungle . . . sleet, storms at sea, rough handling, tough going . . .

**The answer:** design and engineering advances in wooden boxes combining the experience of the *oldest* packing medium with the know-how of the *latest* engineering thought . . .

**First proof:** before new designs are used, exhaustive tests in modern laboratories . . .

**Final proof:** *Wooden Boxes Are Delivering The Goods!* Peacetime packing problems will be answered the same way!

*Remember* WOOD PACKAGING IS GOOD PACKAGING!

★ THE NATIONAL WOODEN BOX ASSOCIATION • Washington, D. C. ★

# "Five in One" for faster packaging

**an example of TRIANGLE PLANNED PACKAGING**

IT isn't enough to buy a packaging machine and fit it into your plant. There has to be a method if you want the best results. Triangle engineers have shown many packagers first *how* to package, then provided the equipment. Often there is nothing "special" about this equipment even though it is required to meet a predetermined packaging method. Anyone is apt to question this, but the answer is simple: Triangle builds the most complete line of volumetric fillers in the world; Triangle builds the most simplified carton sealers available; Triangle Elec-Tri-Pak Weighers are available in a wide range of models and any one model will handle from three or four to twenty or more products with equal efficiency (no other existing equipment can do this).

You are invited to ask Triangle engineers to help you plan your packaging with the understanding that you are not obligated in any way.

The unit illustrated above is a five section Triangle Elec-Tri-Pak Weigher which weighs and fills fine ground, whole bean or steel cut coffee into five 1-lb. cans simultaneously at Morey Mercantile Co., Denver, Colo. The coffee is weighed out and discharged automatically by electrically vibrated feed plates. (Elec-Tri-Pak Weighers are the only packaging machines in the world using this advanced principle.) Production is 60 cans per minute. Cans are shaken well during filling after which they are automatically delivered to the vacuum closing machine. This is typical of Triangle "Elec-Tri-Line" installations coming into prominence in plants maintaining large scale production of food products packaged in cans, bottles, cartons and bags.

ASK FOR NEW 20 PAGE BULLETIN

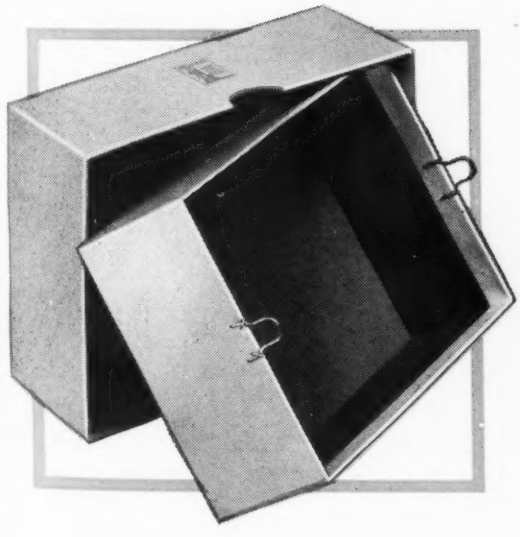
ARMY E NAVY

**TRIANGLE PACKAGE MACHINERY CO.**

907 NO. SPAULDING AVENUE, CHICAGO (51)

WEIGHERS — FILLERS — CARTON SEALERS

Offices in New York, Denver, Cleveland, Birmingham, Los Angeles, Dallas, San Francisco, Framingham, Mass., and Toronto, Ont.



SOUNDS like double-talk, but it's just the accepted military method of giving the code frequency for the day. "Johnny" may be the code for any one of the numerous frequency channels used by our armed forces. The fact that "Johnny" *is* Roger (or O. K. for the day) is due to the use of little quartz crystals of varying thickness, each one of which swiftly and accurately establishes a specific frequency channel. Sets of these tiny, yet highly important, crystals are delivered safely in Mason Mailmasters to our armed forces all over the globe, guaranteeing maximum security in the transmission of military messages.

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# WHY WOMEN PREFER PRODUCTS IN CANS

NO OTHER CONTAINER PROTECTS LIKE THE CAN

# DO YOU KNOW THESE 5 MAJOR REASONS?

***Impartial, nation-wide consumer survey reveals reasons for housewives' preference***

1. **SAFETY . . .** Cans are safer — they don't break, chip, split, leak, or tear.
2. **HEALTH PROTECTION . . .** Goods in cans keep better—and longer.
3. **QUALITY PROTECTION . . .** Cans protect products from air and light—prevent discoloring and deterioration.
4. **CONVENIENCE . . .** Cans are easier to handle, to store, to open, to dispose of.
5. **ECONOMY . . .** Cans are less expensive.

• These five sound reasons for preferring cans insure the future of the familiar, well-liked steel-and-tin containers. For consumers everywhere plainly know the many advantages of cans. And they'll welcome the day when wartime substitute containers are no longer necessary...the day when they can once more buy all the products they want in *cans!*

**CAN MANUFACTURERS' INSTITUTE, INC., NEW YORK**

***Powerful Ad Campaign Helps Build Preference for Cans***

• Full-page, full-color advertisements are running every month to remind consumers of the advantages of cans over wartime substitute containers. Sunday supplements and the ten great national magazines shown here—carrying a monthly average of 30,000,000 printed messages—are helping to build public preference for cans. We expect post-war demand for goods in *cans* to be greater than ever before.

# "...Character Standard Seldom Equalled..."

SHAW INSULATOR COMPANY
IRVINGTON, N. J.

"Modern Plastics" magazine is a most unusual publication. It has materially helped to bring the plastics industry together.

Its editors have set and maintained a standard of character seldom equalled in in the field of technical and promotional journalism.

It is accorded universal recognition by the plastics industry, its advertisers and readers. In my opinion, this makes Modern Plastics the foremost publication in its field.

Frank H. Shaw.

Frank H. Shaw
PRESIDENT

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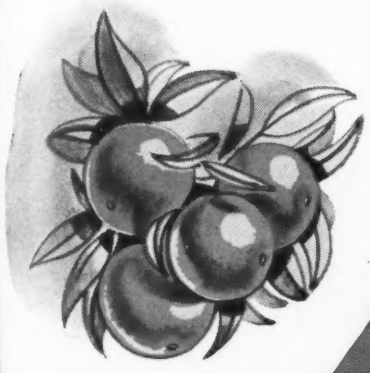
# SAFE FROM TREE TO GLASS



Yes, it's fresh orange juice, packed in a tough Dobeckmun "Tritect" bag, then quick-frozen and kept safe until served. Another example of practical Dobeckmun packaging service executed for Leavell's Pure Juice Company, Pico, Calif.

The laminated transparent film with its attractive design affords remarkable protection, adds "glamor" to appearance, and shows color and quantity at a glance.

Perhaps your product does not lend itself to a transparent package. Then consider the practical heat-sealing "Metalam" foil, a laminated combination that is exceedingly moisture-vapor proof. It provides the protection of metal plus the sales appeal of fine design and printing.

We'd like to work with you on your packaging problems. Out of Dobeckmun technical and research facilities have come many of the most successful packages in military and commercial use. Ask us for samples and suggestions, without obligation, of course.

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OFFICES IN NEW YORK, BOSTON, PHILADELPHIA, CHICAGO AND LOS ANGELES • REPRESENTATIVES EVERYWHERE

# WASHINGTON REVIEW

*by R. L. Van Boskirk*

● **Reconversion and the Office of Contract Settlement**—"You can't really re-convert until all your Government contracts are settled," says the Office of Contract Settlement, agency under the direction of Robert H. Hinckley established by act of Congress last July. Regulations recently issued by this agency give contractors choice of buying Government-owned equipment or having it removed within 60 days after request for removal; establish cost principles, and provide standards for compensation.

The Office of Contract Settlement, it should be noted, does not settle contracts. That is done by the various Government procurement and/or contracting agencies. The function of the OCS is to speed up progress, to insure uniformity in settlements and to guarantee fairness to both sides in these transactions.

In answer to direct questioning, the OCS said its advice to manufacturers of packaged merchandise would be to watch the end use of products they are making on either direct or indirect Government order and be in readiness to make adjustments that will be necessary in the event of cutbacks. Plan now whether you wish to purchase any Government-owned machinery which you may have been using. Watch carefully your inventories of packaging materials. In the event that questions arise, do not address the OCS at Washington but go to the nearest local contracting office of the service with which you made the contract.

● **WPB at Controls after Germany's Collapse**—Come V-E Day, the Army and the Navy will no longer have the say as to whether a privately owned and operated plant is essential. That decision, according to a presidential executive order issued early in October, will be in the hands of the WPB.

The WPB boys will have to make rapid-fire adjustments—perhaps often reversals—in the weeks or months ahead. An action recommended generally by WPB was recently turned down by its own top-side officials. This recommendation would have changed WPB's official attitude on granting priorities and allocations from the familiar "You can't have it if it interferes with the war effort" to the milder "You can have it if it is available and if there's available manpower." Although there were some mutterings, wondering whether the talk about "turning business back to individual initiative" was really sincere, the probable cause of the turn-down was the current setback to the war program on the Western Front.

Likelihood is that WPB means it when promising that practically all production controls will be lifted the day after Germany folds up. They are not so sure, today, however, as a month ago that that will be a definite day or a dragged out period of weeks or months. The intention, however, is to notify all contractors as promptly as possible as to the amount of cutbacks they can expect, so they may start immediately to convert that portion of their plant no longer needed for war production.

Shortages say WPB men, will not be a bugaboo at that time, at least for most of the vital materials. Steel, for example, will be plentiful, as will most other metals, with the notable exception of tin. "But we've gotten along quite well without much tin," says one WPB man. As to most materials, if the cutback anywhere nearly approaches the 40% estimate, we may find ourselves surrounded by surpluses. Some fear that if these surpluses are not quickly absorbed, industry will suffer a slow-down. Consequently, every possible restriction that hinders free flow must be removed.

This does not mean that the WPB organization is being or will be disbanded. They will still exercise powers granted by the War Powers Act, but will put industry on its own so far as is consistent with prosecuting the Japanese war. For various reasons, materials that will continue under tight control are some chemicals, cotton textiles, crude rubber, tin, lumber, cordage fibres and pulp.

No grown-up person is going to look for new products at 4 o'clock the afternoon of V-E Day—it probably will take at least three months before the production lines are turning out familiar articles, but WPB has been getting ready for the move for a long time. Already, they say, some 100 restrictive orders have been eliminated, with schedules all set to throw out some 270 "L" orders and nearly all of the more than 250 "M" orders.

● **Relaxing WPB Controls**—Industry is by no means unanimous in its attitude toward the question of relaxing controls—that could hardly be expected, in view of the varying conditions which obtain as to the raw materials which each uses. For instance, the beverage machinery people, through their advisory committee, recently urged immediate elimination of priority ratings from Order L-292. This, they said, would enable them to plan ahead for future production when all rated orders had been filled. This, of course, is in an industry where the raw materials are least critical, and in which the period of production is a long one. On the other hand, the folding box industry, through its advisory committee, opposed immediate relaxation in the control of paperboard on the ground that fourth-quarter Government requirements will show no diminution and there is no indication of a lessening demand after V-E Day. This seems natural, because the material is highly critical and packaging must go on after victory. But it is not so easy to explain the desire for retention of controls expressed by makers of pulp and paper machinery.

One cynical Washington official waxed sarcastic: "All business men kicked like steers when the controls were clapped on; now that there is a prospect of revoking them, they come running to the Government for continued protection." One of his colleagues, however, was more sympathetic. "We must taper off gradually in some lines because of the supply situation. After all, things have been mighty tight for a long time; if that tight condition eases up all of a sudden, there will be panic buying—and chaos!"

Pertinent point was made by one WPB official, who commented that industry in many cases is willing to assume the job of distributing scarce materials, but prefers in the case of such critical packaging products as paperboard to retain Government controls on the ground that a public announcement of relaxation would hurt the re-use and salvage campaigns, still badly needed.

● **Paper and Pulp Situation**—"Disregarding the relief which will come with V-E Day, do you see anything in the present picture that promises to ease up the shortage of paper and pulp?" This question, pushed directly at a member of WPB's paperboard division, was answered

## SYMBOLS of INTEGRITY

# Alert YOUR Trade-mark NOW
# . . . For Postwar Competition

Wartime population shifts have been enormous. Population shifts mean shopper shifts. Similar migrations of buying power will take place during postwar reconversion. Keep YOUR trade-mark *alive*—on displays and posters at the POINT OF PURCHASE; on booklets and folders at the POINT OF USE. Items developed and produced by Forbes will be correct . . . and fruitful.

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THE SHOP BY THE SEA

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with a short "No." Most careful thought indicates that the general paper and paperboard shortage and high demands will continue probably for 10 months after Germans war ends. Pulp wood receipts are about 10% to 12% above a year ago, but the manpower situation is getting no better and extra uses and higher demands absorb all the pulpwood we can produce. Packaging for military and civilian uses in liberated countries will continue, and military needs for packaging to transfer goods and supplies to the Asiatic front will increase. Some of these supplies will require re-packaging. Industry is cautioned not to let down now. Those who do, officials say, may "take a licking in customer relations when the controls are taken off."

Clarifications and interpretations of orders affecting use of paper board continue of course to appear. One such pronouncement permits sales of empty folding and set-up boxes to housewives for use in frozen food lockers. An interpretation to L-239 defines "Direct fill factory pack" boxes as applying to ice cream or frozen dessert poured into individual containers at the factory in semi-frozen state and then cold-hardened, but not including that sliced from a large block of ice cream which has been cold-hardened prior to slicing.

Direction 1 of M-93, issued late in September, gives preferred status to the following grades of paper and paperboard: Liquid-tight container stock, cup lid stock, ice cream and frozen container stock, and butter carton stock, as well as chemical rag mimeograph. Deleted from the preferred status list are: Rag wet strength map paper, other rag content and chemical reproduction paper, and waxing tissue.

● **No Salvage Letup**—This is no time to let up on salvage and re-use campaigns, says WPB most emphatically. The prospect of Germany's sudden collapse may lead to the conclusion that conservation is no longer so vital; but the fact is—as will be seen from the preceding paragraphs—that such a collapse will not be accompanied by any let-up in the need for paper and paperboard for packaging. Re-use and salvage will need to be continued until there is a genuine condition of plentiful supply of paper.

OPA's increases in ceiling prices of second-hand paperboard containers, announced early in October, were received with elation in WPB's re-use section. "Evidence of real team-work, and a willingness to consider the facts," said one member of WPB—who had struggled long hours for just such an action.

● **V-Board Earns Citation**—The Q. M. C. has announced that it will be used for shipments of Ration "C" instead of nailed wooden boxes, though present commitments for wood will be carried out. (Illustration on page 90 shows present wooden case.) This extra call for V-board will load more responsibility on paper packaging.

● **Possible Revocation of L-332**—Manufacturers of packaging machinery will probably face no problem of surplus disposal. (See "Unsatisfied Machinery Needs," MODERN PACKAGING, September 1944, p. 73.) The backlog of rated orders is still quite sizable, and ready to pounce on machine makers the minute the green light appears are hundreds of users of packaging machinery whose equipment is ready to fall apart.

Up for consideration by WPB is the complete revocation of L-332. Safe prediction is that it will be taken off the books before this issue appears in print. Starved package machinery users need no reminder of its provisions, which restricted deliveries of new, used and re-conditioned container machinery except on priority of AA-5 or higher.

L-41 has been modified to permit new construction of machine units or plants without obtaining WPB approval, provided the total cost of the entire installation does not exceed $25,000.

● **Newly Amended L-103-b**—Producers who package their products in glass may wish to study the newly amended L-103-b in its entirety. Glass of course has been in relatively free supply for several months, so the changes will not be noticed by the ultimate consumer, but, in the judgment of WPB officials, the amended order will considerably simplify packers' problems. Practically all foods are now on the "unlimited" list, and chemicals have also been added to the unlimited list. Quota on all other products have been increased by approximately 30%.

Closures, too, come in for more freedom as a result of this amendment to L-103-b. Undecorated bottle crowns made from reject metal are no longer under quota. Home canning closures are no longer under restriction except for the two-piece variety. Jars for home canning are unrestricted.

The exemption figure for annual glass and closure purchases is now $5,000 instead of the former $2,500, thus affording smaller packers a measure of relief.

WPB officials remind packers that this relaxation of rules does not alter the Glass Containers Standardization Order, L-103.

● **M-300 Liberalizes Handling Procedure for Plastics**—Most of the plastics of importance to the packaging field are still in critical supply, although the effect of the latest amendment to M-300 was to liberalize the handling procedure. This amendment covers all plastics except phenolics, ethyl cellulose, vinyl acetate monomer, polyethylene, vulcanized fibre and casein. The effect of the amendment is to permit suppliers to distribute as they see fit whatever materials remain after essential needs have been supplied, instead of that remainder being subject to allocation by WPB. This gives the producer a free choice of what he may use himself and what he may sell to others.

● **Use of Rx to Be Restricted**—Makers of drugs and proprietary remedies will be on the lookout for a new restriction from the Food and Drug Administration, applying to the use of the familiar prescription mark (Rx), which is scheduled for issuance in the near future. The new regulation will permit the use of the mark only on items that are strictly compounded as prescriptions.

● **Standards for Canned Foods Again**—OPA Price Administrator Bowles' letter requesting Congress to re-open the question of standards for canned foods was followed very quickly by a letter addressed to the same Congressional Committee by Howard T. Cumming, chairman of OPA's Fruit and Vegetable Industry Advisory Committee. Mr. Cumming, who is also chairman of the Planning Committee of the National Canners Assn., charges Mr. Bowles with "a great many misstatements of fact." Holders of ringside seats in the Grade Labeling Battle will not miss reading both letters in their entirety.

● **Revised Joint Army and Navy Specs**—September MODERN PACKAGING (p. 126) promised speedy issuance of the new Revised Joint Army and Navy Specs. Our statement, authorized by the Army department responsible for its production, included the information that the booklet could be obtained from the Quartermaster General's office or the Navy's Bureau of Supplies and Accounts. Came a plaintive postal from a gal in the Pentagon, not too many corridors away from the source of the info, implying that we were off base. In turn, on our last visit to the Pentagon corridors, we asked about it—the gal was right! The booklet won't be out till some time in January.

● **Cork Supply Easier**—Cork is easier because imports are coming in. Crown caps for beverages will benefit. The Cork Industry Advisory Committee, however, recommends the retention of WPB restrictive order M-8-a, even after V-E Day, until a cork supply is assured.

● **Aluminum Powder**—Aluminum powder for silver ink and bronze is not as critical as formerly, and still larger supplies appear to be in prospect. Formal application must still be made on WPB 2360.

● **Personnel Changes**—Harold Boeschenstein is now Deputy Vice-Chairman for Operations of WPB, transferred from his former post as Acting Director of the Forest Products Bureau.

Arnold B. Huysoon succeeds R. W. Whitney as Director of WPB's Paperboard Division.

# As important as ammunition!

AN old line sergeant now in Italy told a war correspondent he spent a lot of time making sure rifles were properly cleaned and cared for in a training camp . . . but never had to worry about that at the front!

When a man's life depends on his rifle . . . he keeps it cleaned and oiled. That's why this container for rifle oil was designed to fit a pocket of the standard cartridge belt. A fighting man wants it with him all the time.

The American Oil & Supply Co. of Newark, New Jersey, packages its lubricating and preservative oil for the Ordnance Department in this container . . . made by Crown. It's not a highly decorative can . . . it's designed for concealment rather than display. But it is sturdily built to stand front line conditions—and that is where it goes!

Another example of how the Crown organization is doing a war production job that is a direct contribution to the success of American arms!

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# U. S. patent digest

**This digest includes each month the more important patents which are of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at ten cents each in currency, money order or certified check; postage stamps are not accepted.**

**Leakproof Carton,** W. H. Inman (to Bloomer Bros. Co., Newark, N. Y.). U. S. 2,355,730, Aug. 15. A leakproof carton made from a single sheet of material, cut, scored and folded to form a bottom and four tapered side walls.

**Sealing Means for Bags,** D. F. Dreher & H. E. Lanzit, Los Angeles, Calif. U. S. 2,355,786, Aug. 15. Sealing means for a bag including a cardlike member coated on one side with a pressure sensitive adhesive, a bag having its open end pressed flatwise down upon said member and said adhesive to adhere on one side of bag.

**Package and Closure Therefor,** H. F. Waters, New York, N. Y. U. S. 2,356,110, Aug. 15. A package for holding units of merchandise substantially conforming to the cross section thereof which comprises a bag adapted to hold a plurality of such units.

**Paper Box,** S. R. Arner (to Old Dominion Box Co., Lynchburg, Va.). U. S. 2,356,194, Aug. 22. A container having inner and outer side walls, a bottom having its periphery fitting snugly against the lower inner side wall.

**Motor Oil Container,** A. G. Hatch (to Fibre Can Machinery Corp., Rutland, Vt.). U. S. 2,356,401, Aug. 22. A container for the packaging of oil, a tubular body formed of fibrous material and having an oilproof inner surface.

**Container Sealing Machine,** Clarence Wells Rothaug, Buffalo, N. Y. U. S. 2,356,472, Aug. 22. A machine for operating on bags containing loose material.

**Bread Wrapping Machine,** C. Arelt (to American Machine & Foundry Co., a corporation of New Jersey). U. S. 2,356,644, Aug. 22. A machine which uses a continuous roll of wrapping material.

**Container,** J. J. Blum (to The Fibre Forming Corp., Olean, N. Y.). U. S. 2,356,969, Aug. 22. A waterproof fibrous container comprising a tubular body, a complementary cap, a rigid extensive tubular liner telescopically nested therein.

**Container,** S. De Mian & C. E. Taylor (to Gaylord Container Corp., St. Louis, Mo.). U. S. 2,357,093, Aug. 29. A shipping container comprising a body and a closure construction thereof, said closure construction comprising separate load sustaining inside and outside closure members.

**Wrapper for Bottles or Phials,** G. W. Taylor, Leeds, England. U. S. 2,357,147, Aug. 29. In combination, a transparent container, a wrapper surrounding the container, a viewing opening in said wrapper.

**Container,** B. M. Williams & F. L. Rushing (to Gaylord Container Corp., St. Louis, Mo.). U. S. 2,357,155, Aug. 29. A container comprising a body and a cover therefor, body including end walls with overlapped flaps registering with rectangular openings.

**Capping Apparatus,** A. I. Shomperlen (to Pittsburgh Plate Glass Co., Allegheny County, Pa.). U. S. 2,356,893, Aug. 29. A capping apparatus adapted to engage and spin a cap upon a screw-capped container.

**Control System for Fillers,** R. B. McKinnis (to Ronald McKinnis doing business as McKinnis Foods, Winter Haven, Fla.). U. S. 2,357,013, Aug. 29. A control system for filling containers with liquid.

**Container,** A. J. Brown, H. E. Copen & J. Nisenson (to Pak-Rak, Inc., a corporation of New York). U. S. 2,357,309, Sept. 5. In combination: a container composed of sheet material and having a continuous side wall and top wall, the top wall being disposed at an angle with relation to the side wall, with a carrier support having an inner and outer plate connected by a top.

**Package,** D. J. Mathieu (to Shellmar Products Co., Mount Vernon, Ohio). U. S. 2,357,339, Sept. 5. A container which comprises in combination a bottom portion consisting of a double layer of a transparent heat sealable material sealed together through an intermediate area of said bottom portion, said double layer being separated on either side adjacent the sealed portion, and after filling and separating form two individual heremetically sealed containers.

**Container & Method of Making Same,** C. E. McManus, Jr., & G. B. Cooke (to Crown Cork & Seal Co., Baltimore, Md.). U. S. 2,357,415, Sept. 5. A metal food and beverage container having a lining comprising a base coating of a substance which is galvanically inactive to silver.

**First Aid Kit,** R. R. Seaton, Deer Park, Ohio. U. S. 2,357,555, Sept. 5. A first aid kit comprising a trunk-like structure consisting of a pair of opposed side walls, a bottom, a rearwall, a lid and two panel front wall.

**Closure for Jars and the Like,** G. Glocker (to Super-Seal Container Corp., Washington, D. C.). U. S. 2,357,322, Sept. 5. The combination of a container including a body having a mouth provided with a wall terminating in an annular shoulder internally of said container, a lid for said container having means adapted to seat the edge of a sealing member, a sealing member having its outer edge seated by said means and having an inner edge adapted to contact said annular shoulder.

**Cap,** C. E. McManus & G. B. Cooke (to Crown Cork & Seal Co., Baltimore, Md.). U. S. 2,357,416, Sept. 5. A cap having a top and a skirt, a cushion liner within the cap, and a protective film co-extensively coated and adhered on the exposed surface of the liner and the entire adjacent interior exposed surface of the cap skirt including the raw edge thereof, which bridges the joint between the liner and the cap skirt.

**Coating Machine,** J. P. Norton (to United Shoe Machinery Corp., Flemington, N. J.). U. S. 2,357,349, Sept. 5. A machine for applying liquid coating material to flexible sheet material.

**Package,** S. L. Galvin & G. L. Sternfield (to Continental Foods, Inc., Hoboken, N. J.). U. S. 2,357,585, Sept. 5. A food package which comprises a flexible envelope, a mass of dry fluent material therein and a mass of plastic containing grease, flavoring and seasoning ingredients in accurately measured amounts, said plastic mass being within and wholly surrounded by the dry material and said plastic material together being adapted upon mixing to constitute a food.

**Seal Forming Mechanism,** F. H. Wells (to American Machine & Foundry Co., a Corp. of New Jersey). U. S. 2,357,786, Sept. 5. A cooling device for heat-sealed wrappers, whereby a runway along which packages having sealed wrappers pass, means for applying moisture to the heat sealed portions to cool the seal, and means adjacent to said moisture applying means for removing excess moisture applied.

**Container,** J. D. Gerahty, New York, N. Y. U. S. 2,358,569, Sept. 19. A non-metallic cylindrical body provided with a base secured thereto and a closure constructed of hardened liquid resin and consisting of a horizontally disposed plate and substantially parallel inner and outer flanges integral with the plate and forming a concealed groove receiving an end of said body.

**Carton Having a Pouring Spout,** W. A. Ringler (to The Gardner-Richardson Co., Middletown, Ohio). U. S. 2,358,659, Sept. 19. In a pouring spout construction for cartons, the combination of an overlying wall in which a triangular perforation may be formed, and an underlying wall having a partially severed portion capable of being drawn through said perforation.

**Spare Lamp Carton,** F. L. Shailer (to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.). U. S. 2,358,664, Sept. 19. A carton for holding fragile articles, both wrapped in open-end cartons and unwrapped, comprising a cardboard blank formed with a pair of tabs respectively disposed adjacent opposite edges, cut therefrom to fit between such wrapped articles and their cartons.

**Container Loading Apparatus,** A. E. Smith, Los Angeles, Calif. U. S. 2,358,421, Sept. 19. A container loading apparatus including a disc, means to rotate said disc step by step, said disc having a plurality of upwardly directed apertures therein, and means for filling ampules, removing air from same, placing stoppers on same, and means to remove the loaded ampule from the ampule cavity.

**Bottle Crate Filling Machine,** N. G. Creamer, Huntington, W. Va. U. S. 2,358,447, Sept. 19. In a bottle crating machine, a bottle receiver, an apertured floor for the receiver onto which bottles are moved as they enter the receiver, and shifting and lowering means for handling bottles by the neck to be lowered.

**Container,** G. P. Hayn, Buffalo, N. Y. U. S. 2,358,709, Sept. 19. A container for readily flexible articles, said container having a body portion formed to receive a stack of articles, a bottom on which said articles rest, and which is of downwardly dished form, one equipped with lid for top.

**Captive Cover Carton,** H. A. Carruth (to National Folding Box Co., New Haven, Conn.). U. S. 2,358,790, Sept. 26. An improved paperboard blank for forming a captive cover carton having a box-forming part and a cover-forming part joined by a connecting part.

**Carton or Container,** R. M. Glover (to Box Blank Corp., New York, N. Y.).

# PRECISION BOTTLING

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Proper materials machined to the correct tolerances is part and parcel of every Pneumatic Cleaner, Filler, Capper and Labeler. These "hidden" features, as well as the visible features, are your assurance of continuous top-notch performance when you use Pneumatic bottling equipment.

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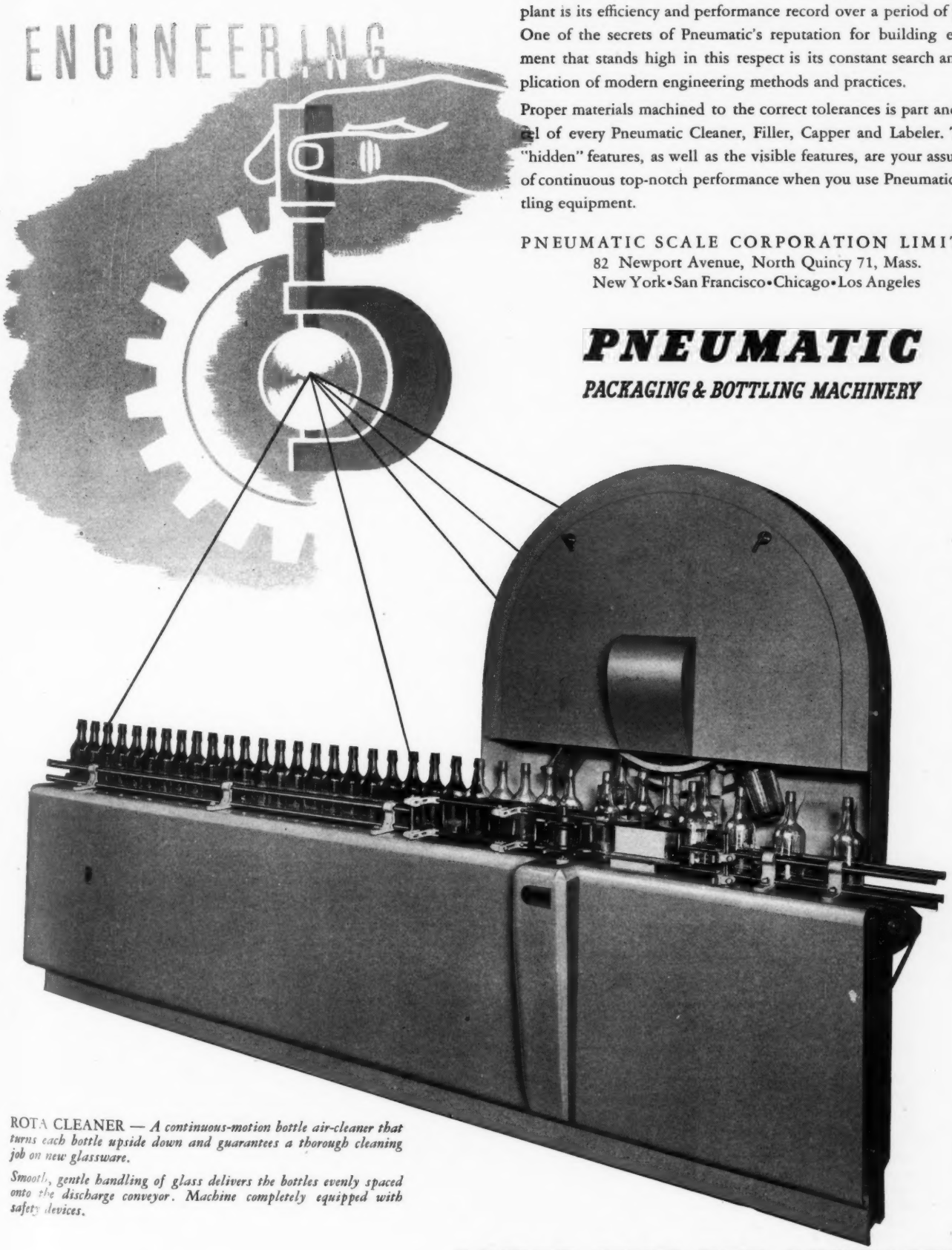


ROTA CLEANER — *A continuous-motion bottle air-cleaner that turns each bottle upside down and guarantees a thorough cleaning job on new glassware.*

*Smooth, gentle handling of glass delivers the bottles evenly spaced onto the discharge conveyor. Machine completely equipped with safety devices.*

## LOWER COST PER CONTAINER

U.S. 2,358,802, Sept. 26. A carton or container and a captive cover therefor formed from a continuous blank of flexible sheet.

**Container,** P. S. Hauton & J. W. Marlin (to Scripto Manufacturing Co., Atlanta, Ga.). U. S. 2,358,859, Sept. 26. A container formed from a lined board having one side rough and comprising fold lines dividing the container into a central panel and side panels, the side panels being adapted to be folded so that their rough sides face the rough side of the central panel and expose the lined side to view.

**Container,** R. Guyer (to Waldorf Paper Products Co., St. Paul, Minn.). U. S. 2,358,924, Sept. 26. A container comprising a shell provided with a bottom and lateral walls connected thereto and extending upwardly therefrom to terminate along raw upper edges, and equipped with a liner.

**Packing Box,** G. L. Smith, Rock Island, Ill. U. S. 2,358,943, Sept. 26. In a box having an access opening, a plurality of side walls having edges bounding respective edges of said access opening, the cover of which is disposable in a closing relation with said opening.

**Valve for Bags,** F. D. Gottwald (to The Albermarle Paper Mfg. Co., Richmond, Va.). U. S. 2,359,033, Sept. 26. A valve for bags comprising a tubular member rolled back upon itself to form an inner sleeve and an outer cuff, the said cuff having its outer marginal edge attached to the bag, and a flap having one edge secured to the outer cuff whereby the said flap will be drawn into the inner sleeve and close off the sleeve when the sleeve is pulled out.

**Method and Apparatus for Applying Closures to Containers,** J. W. Thomas (to Aluminum Company of America, Pittsburgh, Pa.). U. S. 2,358,889, Sept. 26. A sealing head including a ring having a downwardly flared aperture and a plurality of fixed equally spaced lugs extending inwardly from the wall of the aperture, each of said lugs having a flat perpendicular face extending downwardly from the top of the aperture and a flat, angularly disposed face fairing into the wall of the aperture above the maximum diameter.

**Valve-Controlled Filling Machine,** M. Goldberg, New York, N. Y. U. S. 2,359,029, Sept. 26. In a machine for filling small fabric containers, a casing and means for maintaining filling material under air pressure in said casing.

**Filling Machine,** L. A. Boylan, Chicago, Ill. U. S. 2,359,082, Sept. 26. In a filling machine, a support for a container, means for temporarily closing the container, means for thereafter delivering material into the container, means for exhausting air from the container, means for rotating the container while the exhausting means is active to subject the material to the action of centrifugal force whereby to separate air from the material into the exhausting means, said screen being rotatable with the container.

**Method of Making Packages,** M. H. Sidebotham, Newton, Mass. U. S. 2,359,271, Sept. 26. The method of successfully making packages with string attached tags comprising positioning a flat sheet of thermoplastically treated wrapper material in spaced apart relation with a flat sheet of thermoplastically treated tag material, depositing a charge of the commodity to be packaged upon a side portion of the wrapper material, positioning a continuous section of tag string to pass through the mid-portion of the wrapper material, and then folding along line adjacent to the string.

**Rug Package,** N. C. Pike (to Carthage Mills, Inc., Cincinnati, Ohio). U. S. 2,357,908, Sept. 12. In combination in a rug package, an outer tubular container and a plurality of rolled rugs in nested, coaxial relationship therein, each of said rugs, except the outer one, having an individual wrapping to maintain its roll size, there being sufficient space between inner rolled rugs and outer rolled rugs to permit successive removal of inwardly disposed rolls without disturbing outward rolls.

**Surgical String Package,** S. B. Bradshaw (to Armour & Co., Chicago, Ill.). U. S. 2,357,996, Sept. 12. A surgical string package comprising a hermetically sealed tube, storing fluid within said tube.

**Carton,** J. A. Zinn, Jr., Belmont, Mass. U. S. 2,358,124, Sept. 12. A carton comprising a rectangular body portion having a longitudinal side seam and a bellows-fold end closure formed by folded extensions of the body portion including an elongated mouth portion having a pleat in each end.

**Bag Closure and Method of Making Same,** H. Anderson (to General Mills, Inc., a corp. of Delaware). U. S. 3,358,125, Sept. 12. The method of making a closure for filled paper bags having one or more walls, by means of certain folding arrangement and intucking, and applying a folded reinforcing metal strip to the outwardly folded portions of the top.

**Waterproofing Material & Method of Making Same,** L. F. Bramble (to Trumbull Asphalt Co., Chicago, Ill.). U. S. 2,358,140, Sept. 12. A package containing rigid sheet material with layers in contact, said layers being impregnated with asphalt waterproofing composition, said composition on each layer being cohesive to itself and adhesive to the sheet material.

**X Box,** S. White, Trinity, N. C. U. S. 2,358,194, Sept. 12. As a new article of manufacture, a box device comprising a shallow box provided with two ends, each end being provided with a projection extending the full height of the end, said box provided with a central upstanding hub and with a hub socket in the outer face of the box and contiguous to inner end of hub.

**Plastic Material Wrapper,** C. Nicolle, Montrouge, France (vested in the Alien Property Custodian). U. S. 2,358,246, Sept. 12. A package adapted especially for use in the protection of perishable articles and material from air, moisture and abrasion, and is composed of two sheets of material, at least one of which has a plurality of alveolated portions therein, said sheets being superposed and adhesively secured together at their contacting surfaces, said alveolated portions each providing a receptable adapted to conform to the configurations of the enclosed articles, and provided with intersecting lines of tear-off perforations.

**Inner Closure for Containers,** W. Wild, Elmhurst, N. Y. U. S. 2,358,270, Sept. 12. A cosmetic package, comprising a container having a pasty cosmetic material therein, said container having a top rim defining an opening, a readily detachable transparent content-revealing inner cover of plastic material having a downwardly extending wall surrounding a central portion depending from and extending below the rim of said opening, contacting and pressing against said pasty cosmetic material, and which material adheres thereto.

**Apparatus for Packing Products,** J. E. Baechle & H. M. Nicholls (to American Can Co., New York, N. Y.). U. S. 2,357,802, Sept. 12. A machine for treating filled containers by the use of inert gas for sweeping out the air in the container and in the interstices of the product incident to vacuumizing and sealing.

**Capping Machine,** J. Hohl (to Owens-Illinois Glass Corp., a corp. of Ohio). U. S. 2,357,826, Sept. 12. A capping machine comprising a horizontally disposed endless conveyor, a motor geared to the conveyor for driving it continuously, a cam disk geared to the motor, a ram spaced above the conveyor and mounted for reciprocation toward and from it.

**Container Overcap and Method of Applying Same,** D. G. Magill (to American Can Co., New York, N. Y.). U. S. 2,357,837, Sept. 12. The method of applying a thermoplastic adhesively coated thin cellulosic overcap to the top end of a sealed wax-coated fibre container having a peripheral laterally projecting ledge to provide a moisture- and tamper-proof package.

**Container Filling Mechanism,** G. L. Cross & W. F. Miller (to Tobin Packing Co., Inc., Fort Dodge, Iowa). U. S. 2,358,001, Sept. 12. An article deforming mechanism comprising a hopper having opposite parallel walls, a third wall connected to said parallel walls and a movable wall pivoted adjacent one end to said walls.

**Container & Method of Forming Same,** G. A. Moore (to Shellmar Products Co., Mount Vernon, Ohio). U. S. 2,357,842, Sept. 12. The method of forming containers which comprises forming an inner tube composed of a thermoplastic pellicle, folding a relatively rigid bracing member about said tube, forming exterior tube about said bracing member, and forming a closure by heat-sealing all extensions of said tubes to provide an hermetic seal.

**Shipping Tray for Flowers,** P. Bacigalupi (to L. Basso & R. Zappettino, San Francisco, Calif.). U. S. 2,358,295, Sept. 19. A tray for holding flowers including a sheet of bendable material foldable along transverse lines and providing when folded inclined panels for engaging flowers.

**Dispensing Carton,** C. L. Gilbert (to American Coating Mills, Inc., Elkhart, Ind.). U. S. 2,358,502, Sept. 19. In a dispensing carton a sleeve substantially rectangular cross section comprising side and front and back walls, a slide of substantially rectangular cross section comprising side and front and back walls slidable in said sleeve into an inner position with its ends flush with ends of said sleeve and an outer position with its upper end portion projected beyond said sleeve.

**Bottle Package,** F. C. McKinley, Shaker Heights, Ohio. U. S. 2,358,523, Sept. 19. A paperboard bottle box comprising top and bottom walls of elongated tapering trapedoidal form, the top wall having a large hole adjacent its wide end and a small hole adjacent it narrow end, said holes being centrally disposed with respect to the side edges of the wall and adapted to receive the necks of bottles.

**Sterile Package,** H. F. Waters, New York, N. Y. U. S. 2,358,547, Sept. 19. A sterile packaging unit which comprises a four-walled carton blank having medial score lines in two oppositely disposed walls thereof, a heat-sealed seam hermetically sealing said liner to unit and preventing the admittance of deleterious matter.

## Rely on National's application research to give you a bond that keeps moisture in and keeps moisture out

Water, water — everywhere: A bottle in a picnic ice-pail . . . a cigarette package in a perspiration soaked pocket . . . an ampule of penicillin suddenly shifted from refrigeration into tropical humidity . . . an overseas shipping carton floating ashore. Each with a product to protect. Each with an identity to maintain.

True, there's nothing new in an adhesive that's merely water resistant. But there is big news in the *balance* National has achieved between resistance to any form of moisture and all the other properties that an adhesive must have to do a specific job.

Today, your National representative can recommend a moisture-resistant adhesive to meet all the complexities of your bonding problems. And to the factors of surfaces, application methods, and field conditions, National adds an extra margin of operating safety as insurance against commercial variables.

Remember always, the value of an adhesive is based, *not upon its almost insignificant unit cost*, but upon the final sales protection it gives to your product.

You can safely rely upon National, as a pioneer in industrial as well as laboratory research, to engineer the one exact adhesive to your specific job. Inquiries are invited — NOW!

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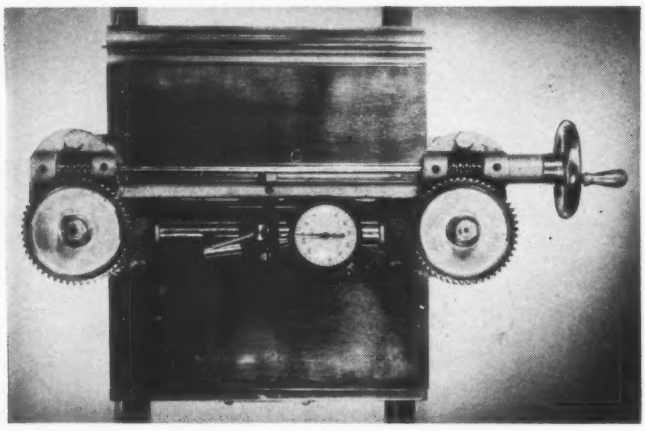
EVERY TYPE OF ADHESIVE FOR EVERY TYPE OF ADHESION

# Equipment and Materials

## LABORATORY COATING MACHINE

Especially produced for laboratory research, development work and production control, the Laboratory Coater, manufactured by The Martinson Machine Co., Kalamazoo, Mich., is a unique precision instrument for spreading a liquid film on paper or other flexible base. The machine is equipped with a standard micrometer dial designed to read in half-thousandths of an inch. Among the specific problems on which the Coater is being used are: investigation of new materials for coating; testing raw stock characteristics; coated paper grade development, production of color swatches; coverages of liquid films; and casein strength.



Its overall dimensions are 36 in. long by 12 in. wide by 15 in. high, and it is constructed to handle a sheet 9½ in. by 11 in. maximum. Chromium plating on working parts and surfaces ensures long life and resistance to wear and corrosion. May be equipped with dials to read in one ten-thousandth of an inch.

## THERMOSETTING PLASTIC COATING

The Watson-Standard Co., 225 Galveston Ave., Pittsburgh, Pa., has announced a resinous coating completely converted by heat, which reacts to an infusible, insoluble hard surface. The finish known as "Phen-Cote" may be hand or automatically sprayed, or may be dipped or roller-coated, and is said to form a continuous, homogenous film which is corrosion resistant. The manufacturers claim it is readily adapted to producing linings for sanitary food cans to contain fish, meats and other edible products, requiring a lining having oil-resistance, since it contains no oil modifier or plasticizers which have a tendency to dilute or weaken the resistance of the film. As an exterior protective coating, they further claim that the product will produce corrosion resistance on black-iron plate, electrolytic and hot-dipped tin plates.

## PLASTIC SURFACED PLYWOOD

Kimberly-Clark Corp., Neenah, Wis., has developed a line of phenolic resin impregnated papers for application to base plywood to form a sturdy waterproof skin. The material, known as Kimpreg plastic surfacing, is applied under heat and pressure in the actual plywood manufacturing process. The resulting product is said to have about one-twentieth the water absorption of ordinary "Waterproof" plywood, extremely low moisture-vapor permeability and a tough, abrasion-resisting surface.

At present, it is produced solely for use in export shipping containers with waterproof internal adhesives. The American Furnace Co., St. Louis, Mo., has produced shipping cases for fragmentation bomb accessories using Kimpreg surfaced Douglas Fir plywood ⅜ in. thick, exterior type. Both the top and bottom of the box were made separately with 18-gauge sheet steel, rolled edges applied by riveting. The cleated sides of all rivets on the inside of the box were coated with a special sealer to further minimize the possibility of water oozing into the container.

Tests made at Forest Products Laboratory, Madison, Wis., prior to adoption by Army Ordnance, included a severe test of a fully loaded container in a tumbling drum, and immersion in water for twenty-four hours. Weighing before surface water had evaporated revealed a moisture pick-up of less than 1%, also maintenance of its waterproof skin even under the severe impacts imposed in the drum test. Postwar, the company announces, this unique material will be available in a range of colors.

## METAL PLATING ON GLASS FOR SOLDER SEAL

A perfect hermetic seal, from 350 deg. F. down to dry ice temperatures, applicable to glass and ceramics has been developed by the Electro Plastic Processes, 2035 W. Charleston St., Chicago. Laboratory and field tests indicate that the adhesion obtained is much better than that of other commonly used methods; and tests on pyrex glass indicate the adaptability of the new process for all temperature ranges. Any normal soldering method is satisfactory—hot iron, oven soldering or electronic, and no special solders are required. Among other uses, the process is adaptable to either glass or ceramic cases that can be plated with a metallic band for soldering to metallic end caps or insulators plated for solder sealing to metallic containers.

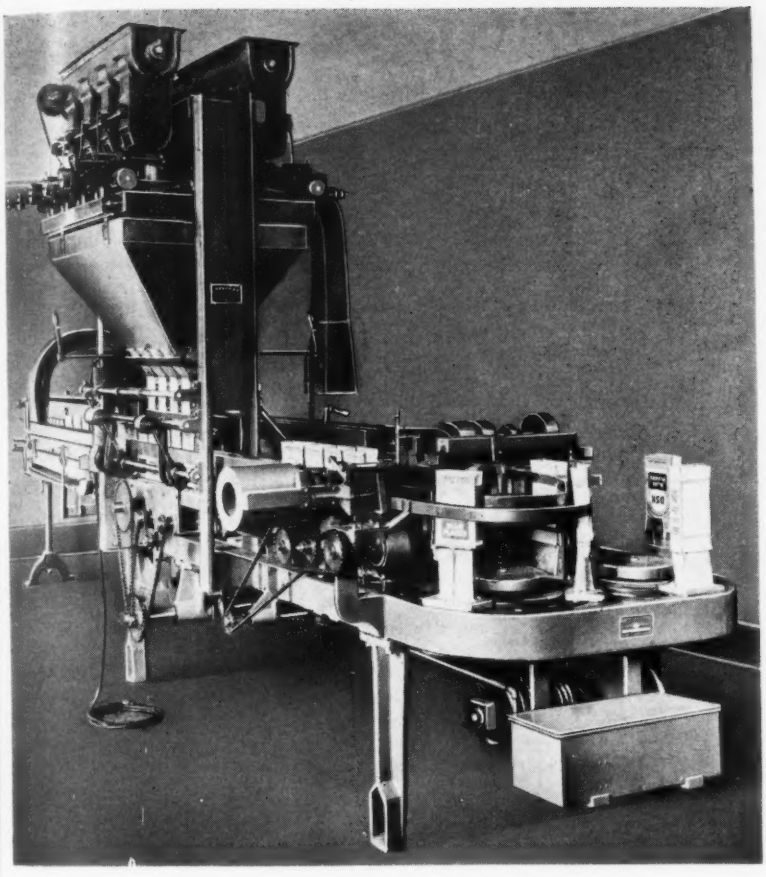
## MOISTURE-RESISTANT ADHESIVE

A new moisture-resistant adhesive for gluing labels on containers for overseas shipment has recently been announced by the Glue Dept. of Swift & Co., Chicago. The new adhesive is said to be particularly good for applying labels to galvanized iron and fibreboard containers, though it will adhere to many plastic surfaces, tin and other metals. The product is water insoluble and dries in from one to three minutes, depending on the porosity of the surface being labeled and the atmospheric conditions. It meets Army requirements for salt water- and oil-resistance.

## FROZEN FOOD OVERWRAP

"Frostinette," a 100% cotton knit tube fabric, four inches wide, which stretches to three times its width, is useful in the packaging of any shaped cut of meat, fish or fowl for freezing and storing The tubing is slipped on over the moisture-vaporproof wrapper,

thus providing an added protection by keeping the inner wrapper in close contact with the product. In addition it prevents the unfurling or wrapping of the inner wrap thus minimizing the danger of freezer burns, contamination from foreign contact, etc. The Adler Co., Cincinnati 14, Ohio, announces the tubing is available in 50-ft. rolls, as illustrated, as well as in 25-lb. bulk rolls.



*BACK Them with Your BONDS*

*PACKOMATIC Automatic Carton Sealer (left) Seals Both Top and Bottom of the Carton on the Same Machine.*

# PACKOMATIC AUTOMATIC

## *Carton Sealer with Net Weigher*

## ECONOMICAL — HIGH SPEED — SAVES FLOOR SPACE

Automatic synchronization of Weigher and Sealer allows flow of product only when cartons are in filling position.

Two or four cartons are filled simultaneously . . . at speeds up to 75 per minute . . . Convertible, with exception of automatic carton feed for reasonable range of sizes . . . No regular operator required except to replenish magazine carton supply.

Specially designed to handle semi-free and free-flowing products. Ideal for packaging grain and other cereal products.

There is a PACKOMATIC Unit for practically every packaging requirement. Your request for recommendations incurs no obligation to buy.

**PACKOMATIC PACKAGING EQUIPMENT**

Case Imprinters
Carton Sealers
Volumetric Fillers
New Weight Scales

Carton Making Machines
Dating (Coding Devices)
Auger Packers
Paper Can Tube Cutters

Paper Can Tube Gluers
Paper Can Shrinkers
Paper Can Cappers
Paper Can Setup Conveyors

*For Better Package Handling Tomorrow, Consult PACKOMATIC Today.*

# PACKOMATIC

PACKAGING MACHINERY

J.L. FERGUSON CO. JOLIET, ILL.

NEW YORK • CHICAGO • BOSTON • CLEVELAND • DENVER • LOS ANGELES • SAN FRANCISCO • SEATTLE

# Plants and People

**Continental Can Co., Inc.,** has acquired the assets and business of Owens-Illinois Can Co., a subsidiary of Owens-Illinois Glass Co. Acquisition of the three Owens-Illinois plants will bring to 66 the number of Continental plants. It is the desire and intention of Continental to have the Owens organization remain intact. Continental has acquired, in addition, all of the assets and business of Mono Service Co., Newark, N. J., manufacturer of paper hot drink cups and paper food containers.

*H. E. Raymond*

**Harriet E. Raymond** has been appointed assistant advertising manager of the Celanese Corp. of America, according to a recent announcement made by officials of the company. Since 1938, Miss Raymond has acted as advertising manager of the Celanese Celluloid Corp., plastics division of Celanese Corp. of America and her entire business career has been in the plastics field. In addition to advertising, her experience in the industry has embraced production of fabricated articles, inventory control, research, merchandising and sales promotion.

**Jack Fairchild Fleming** is the new head of the Chicago branch of Dohner & Lippincott, New York industrial design firm. The branch office, which opened on October 1, has offices in the Carbide & Carbon Building.

**Ben Nash's** new address is 15 Gramercy Park, N. Y. (National Arts Club) where he has established his headquarters as consultant in matters concerning product and package development.

**The American Section of the Society of Chemical Industry** has announced the election of Dr. Elmer K. Bolton, chemical director of E. I. du Pont de Nemours & Co., to receive the Perkin Medal for his accomplishments in industrial research.

**Willard M. Cornelius,** who resigned recently as president of the Parker Rust Proof Co. to become chairman of the board, has announced that Van M. Darsey, technical and service director, has been elected president.

**W. Ralston Co., Inc.,** has advanced a major step in its expansion program with the acquisition of extensive property at Old Bridge, N. J. The additional 70,000 feet of floor space will be equipped with complete facilities for manufacturing all grades of duplex, reinforced and saturated papers. A laminating machine, said to be one of the largest in the country, is being installed which will enable the production of paper up to 108 in. wide.

**Robert R. Cole,** vice-president of Monsanto Chemical Co. and general manager of the phosphate division, has been elected a member of the board of directors. Mr. Cole fills the place of the late John C. Brooks.

**Floquil Products Inc.** has moved its sales room and general offices to 1993 Broadway, New York 23.

**C. R. Whistler,** for many years manager of the Los Angeles branch of International Printing Ink Corp. of California, has relinquished his branch duties to Joseph D. Richardson and will concentrate on important customer contacts and postwar plans for the company.

**Seal-Spout Corp.,** Newark, N. J., a newly formed organization headed by Henry Brucker, president, and officials of the American Aluminum Ware Co., has announced that it will be engaged in the manufacture of aluminum pouring spouts and automatic spout inserting machines.

**Hubbs and Howe Co.** moved as of October to its own recently purchased building at 1702–16 Elmwood Ave., Buffalo 7.

**F. N. Burt Co.** recently presented a preview of "soon to be had" paper lipstick cases and cosmetic packages to the New York press . . . plus a fascinating exhibit giving the story of the metamorphosis of the first war-emergency paper lipstick case into the new case which women will soon be using.

**The Menasha Products Co.,** sales division of Marathon Corp., has announced a change of name to Marathon Corp. The change, according to Marathon officials, is being made to provide uniform identification for the various manufacturing plants and the varied manufacturing activities of the company.

**American Can Co.** will start the construction of a new manufacturing plant on a 49-acre site in St. Paul as soon after the war as labor and materials are available.

**Capt. Thomas C. Sheffield,** western manager of the New England Collapsible Tube Co., and now working as executive assistant to Gen. H. H. Arnold, is back from an inspection tour of air force installations abroad. He may now be reached at room 3E-1012, Pentagon Bldg., Washington 25.

**The Wyomissing Glazed Paper Co.** has purchased the Reading Glazed Paper Co., but the two companies will continue to operate individually as before. Sam R. Fry will act as president for both concerns while C. Richard Crowther will be secretary and general manager and Spurgeon F. Barndt will manage advertising and sales.

**Minnesota Mining and Mfg. Co.,** St. Paul, has acquired the business of the Mid-States Gummed Paper Co. of Chicago, bringing 171,250 additional sq. ft. of plant, office and warehouse space and about 270 ft. of track frontage on the Burlington's right-of-way to the company. George H. Halpin, vice-president, Minnesota Mining, will correlate the activities of the two concerns.

**Ralph C. Persons** has been appointed sales manager of the Geo. H. Morrill Co., division of the General Printing Ink Corp.

**R. N. Conners, vice-president and sales manager of Chase Bag Co.,** has just mailed a letter to all former members of the sales force who are now in the armed forces promising postwar security to these men as they are discharged.

**A newly created sales promotion division, headed by Howard A. Trumbull,** has been announced by Owens-Illinois Glass Co. The company has also put into effect plans for the re-employment of men and women who left the company for service in the armed forces which covers all regular employes plus many former employes whose service was of a temporary nature.

**Dr. Richard M. Hitchens** has been promoted to the position of associate research director of Monsanto Chemical Co.'s organic chemicals division.

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**Donald Adam MacArthur,** assistant manager of sales, Pacific division of the American Can Co., died, September 16, of a heart attack. Mr. MacArthur was 49 at the time of his death.

**Frank X. Hogan,** vice-president and general sales manager of the Container Co., a division of Continental Can Co., died suddenly while on vacation on September 30 at the age of 55.

# PAREZ*

## for Papers that can "TAKE IT"

The trade-mark PAREZ has been chosen to designate all synthetic resins offered to the Paper Industry by the American Cyanamid & Chemical Corporation. This family of products includes our well-known wet strength resin derived from melamine. This same resin is now known as PAREZ 607.

## PAREZ Is New Name for Cyanamid's Well-Known Wet Strength Paper Resins

Bringing lasting wet strength qualities to paper has proven to be one of Cyanamid's most important and timely contributions to wartime industrial development. The "secret" is a special type of resin bonds paper pulp fibers together in such a way that they resist separation when exposed to water or aqueous material.

Most of the developments in the use of PAREZ have been accelerated and absorbed by military considerations. These many and varied war-proven uses will, with peace, serve as the basis for the development of new paper product applications for civilian goods in which wet strength qualities will provide sales appeal and advantages. Listed here are some of the applications for wet strength qualities in paper:

- Grocery and Shopping Bags
- Multiwall Shipping Bags for Heavy Duty
- Cartons and Carton Liners
- Liners for Crates and Barrels (plain and laminated)
- Moist-Product Containers (frozen foods, potatoes)
- Shipping Labels and Tags
- "Wet-Scuff" Resistant Boxes and Bags
- Maps and Blueprint Papers
- Photographs
- Direct Process Prints
- Towels, Facial Tissues and Handkerchiefs
- Hanging Papers
- Twisting Papers
- Inner & outer plies only of paper board for use under moist conditions
- Papers for dry use where maximum fold is required
- Thin papers where good sizing is difficult
- Wipers replacing rags
- Outdoor Advertising
- Papers exhibiting minimum dimensional change with humidity variations.

Waxes • Rosin Size • Synthetic Resins
Casein • Alum • Corn Starch • Sulphonated Oils • Fillers • Defoamers
Soda Ash • Caustic Soda • Salt Cake
Acids • Clays • Satin White • Wetting Agents • Calmicro (Calcium Carbonate)
and other Paper Chemicals

**American Cyanamid & Chemical Corporation**

*(A Unit of American Cyanamid Company)*

30 ROCKEFELLER PLAZA · NEW YORK 20, N. Y.

DISTRICT OFFICES: Boston, Massachusetts; Philadelphia, Pennsylvania; Baltimore, Maryland; Charlotte, North Carolina; Cleveland, Ohio; Chicago, Illinois; Kalamazoo, Michigan; Detroit, Michigan; St. Louis, Mo.; Azusa, Cal.; Seattle, Wash. • In Canada: Dillons Chemical Company, Ltd., Montreal and Toronto

# For Your Information

**A Canadian Packaging Committee** has been established for the purpose of encouraging full cooperation between various agencies in Canada and to work with the Anglo-American Packaging Committee in London and the Container Co-Ordinating Committee in Washington towards the development of better and more economical packaging of munitions and supplies. L. K. Webber, Director of the Ammunition Production Branch, Dept. of Munitions and Supply, is chairman of the new committee. Members have been selected from the Dept. of National Defense (Army, Naval Services and Air), the National Research Council, the British Admiralty Technical Mission, the Inspection Board of the United Kingdom and Canada, The Depts. of Trade and Commerce, Fisheries, Transport and Agriculture, the Wartime prices and Trade Board and the Canadian Mutual Aid Board. The Committee will supervise all research work, testing and development of packaging for war supplies, and will cooperate with manufacturers to select the best possible containers with a minimum of delay and expense. It is expected that a full-time vice-chairman and a full-time secretary will soon be appointed.

**The Dow Chemical Co.** has issued a 32-page booklet on the packaging of metal parts which defines and illustrates the principles governing the packaging of all types and weights of metal products. The booklet was designed by Peter Muller-Munk, of the Carnegie Institute of Technology.

**"The Palletized Load" by J. D. Malcolmson,** technical director of Robert Gair Co., Inc., is an illustrated, 28-page booklet which discusses the new philosophy of simplified packaging which effects tremendous economies in shipping space and handling costs. Manufacturers who ship in carload lots will find this booklet interesting and profitable reading. The booklet is free upon request to the company.

**The storage and distribution division of the Office of the Quartermaster General** has compiled and issued a two-volume complete collection of specifications covering the packaging and packing of subsistence and resale items for overseas shipment. Volume I covers subsistence items and is published for Army use only, while volume II provides packing and packaging specifications for resale items and forms a part of the contract, or order, when placed with the supplier.

**Hercules Powder Co.,** Wilmington, Del., has published a small 8-page folder, "A Quick Trip Through Hercules Land," which gives a thumbnail sketch of the company's history to date in the explosives aud plastic field along with a promise of what may be expected in the future. Copies may be had upon request.

**Westinghouse Electric Elevator Co.** discusses how to plan postwar air conditioning to control temperature and humidity, clean the air and provide adequate ventilation and circulation in a new 16-page illustrated booklet. Installation photos show three general types of air conditioning and the test tells how air conditioning works. Copies of the booklet "How to Plan Your Postwar Air Conditioning Today" may be had from the company by writing to 150 Pacific Ave., Jersey City 4, N. J.

**"An Annotated Bibliography of Color"** has been issued by General Printing Ink Corp. which contains the titles of about 75 books on color. This booklet is intended as a convenient check list for anyone interested in assembling a useful library. Copies may be had from Charles A. Gardiner, advertising manager, General Printing Ink Corp., 100 6th Ave., N. Y. C.

**"Catalog of Bakelite and Vinylite Plastics"** is the name of the new booklet published by the Bakelite Corp. It is a primer-type catalog which tries to answer a lot of the questions people ask about plastics. The 24 pages describe molding and extrustion compounds; laminating plastics; sheets, sheeting and film; rods and tubing; cast resins; glues and adhesives; bonding materials; coating products; impregnating, sealing and calendering materials, and special copolymer resins. Copies are available upon request.

**At a recent meeting of the National Assn. of Photo Lithographers** a graphic demonstration of the forward strides of research in printing ink colors was made by the International Printing Ink division of Interchemical Corp. A large exhibit showed life-sized views of the new electron microscope and the G. E. recording spectrophotometer.

**Island Equipment Corp.** announces that it has been appointed exclusive world distributors of all conveying equipment manufactured by the Conveyor Specialty Co., formerly the Bruce & Hubbell Engineering Co., of Walpole, Mass. In the future all inquiries relating to this type of equipment should be addressed to Island Equipment Corp., 101 Park Ave., New York 17, N. Y.

**The first annual meeting of the New South Wales Package Manufacturers Assn.** was held at Manufacturers' House, in Sydney, Australia, on Sept. 6, 1944.

**The "Congress for the Presentation of Products of Tomorrow,"** composed of leading manufacturers in almost all lines, is sponsoring an exposition at the Chicago Coliseum early in 1945. The exhibit will include articles made possible by wartime research and prewar products which have been completely redesigned. Among some of the interesting exhibits planned will be plastics and other synthetics, dehydrated and other packaged foods.

**In a small booklet "Your Business is Our Business,"** The Hinde & Dauch Paper Co. smooths the way for visiting salesmen by giving information such as the name of the man he wants to see, where to find him, the type of supplies the company uses and other welcome hints even down to where to get a meal and at what hotels to stop. The receptionist gives one of these booklets to each salesman.

**"Successful Bottle Labeling"** is a 32-page handbook published by National Adhesives, a division of National Starch Products, Inc., which contains facts on labeling methods and machines, package selection, label specifications, hints on handling adhesives and recommendations for the regulation and care of labeling equipment. The second section is devoted to a chart of labeling difficulties with explicit instructions for tracing trouble and information for correcting it. Copies may be had free upon request.

**The Robert H. Clark Co.** announces the release of its new adjustable cutting tool catalog No. 44. Printed in two colors and illustrated with diagrams and photos of actual operations, the catalog contains complete specifications and prices, as well as detailed descriptions of the company's entire line. Copies may be had by writing to the company at 9330 Santa Monica Blvd., Beverly Hills, Calif.

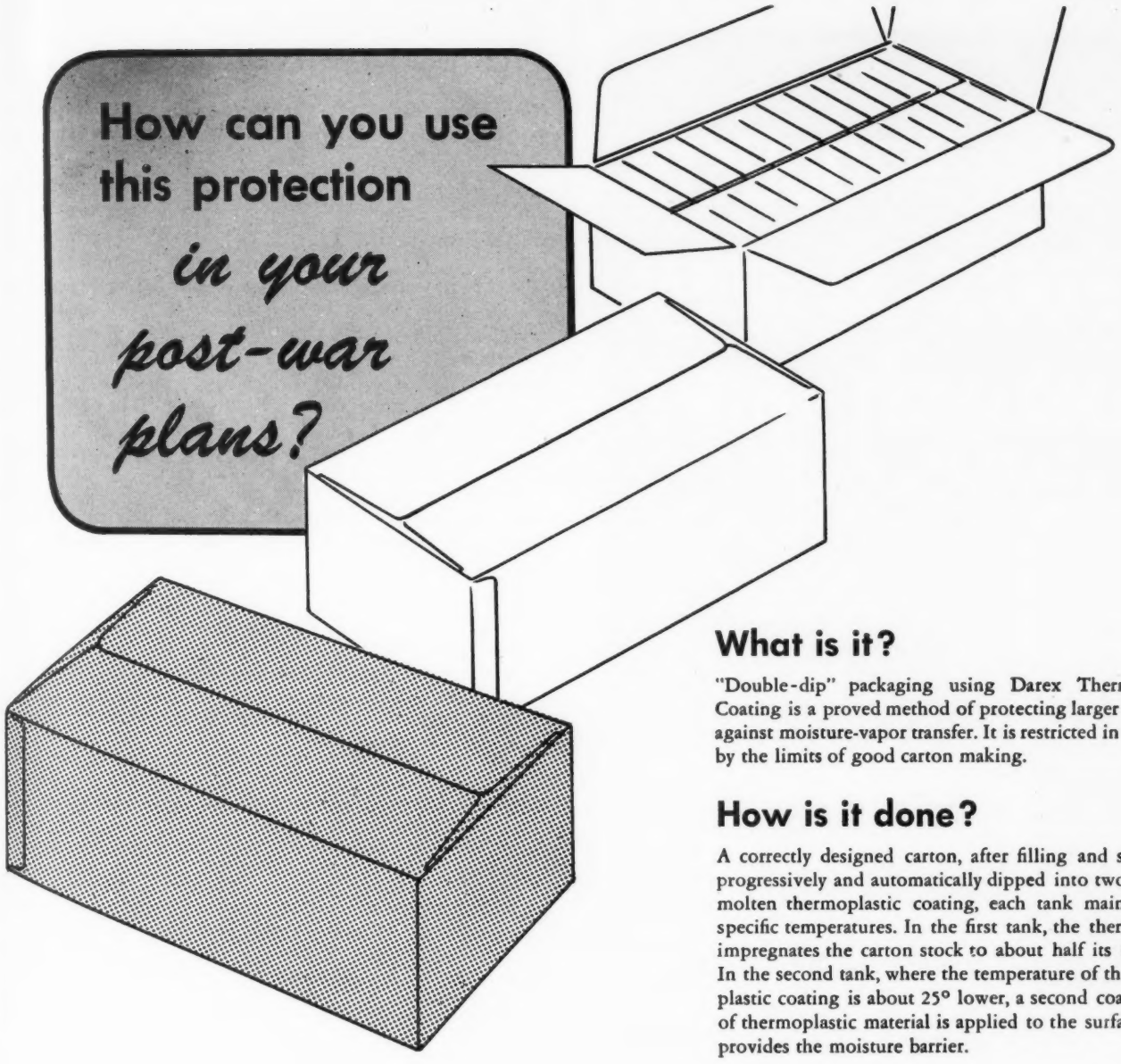
**To give plant men specific ideas on how to use Mystik Self-stik** waterproof cloth tape, the Chicago Show Printing Co., 2635 N. Kildare Ave., Chicago, has published a new illustrated booklet which discusses the subject extensively. This booklet, No. 2001, is available along with a sample of tape by writing the company.

## CORRECTIONS

We regret that credit for the outer wrap for "My Alibi" perfume, page 98 of the June issue, was given to King Lithographing Corp. instead of Meissner Colorcrafts, New York City.

On page 94 of the September issue, the maker of the carton for the motion sickness preventative should have read Paper Package Co., Indianapolis, instead of Package Paper Co.

# How can you use this protection *in your post-war plans?*



TO THE
POST-WAR PLANNING COMMITTEE

Here is a new method of packaging that you should investigate. We have had a great deal of experience both in developing special thermoplastic coating materials and also in the setting up and operation of packaging lines. Let us work with you and your carton supplier.

## What is it?

"Double-dip" packaging using Darex Thermoplastic Coating is a proved method of protecting larger packages against moisture-vapor transfer. It is restricted in size only by the limits of good carton making.

## How is it done?

A correctly designed carton, after filling and sealing, is progressively and automatically dipped into two tanks of molten thermoplastic coating, each tank maintained at specific temperatures. In the first tank, the thermoplastic impregnates the carton stock to about half its thickness. In the second tank, where the temperature of the thermoplastic coating is about 25° lower, a second coating layer of thermoplastic material is applied to the surface, which provides the moisture barrier.

## What it does

By the use of Darex Thermoplastic Coating materials, a continuous, hard, non-blocking, protective coating can be applied that keeps moisture vapor out where moisture-sensitive products are packed, or keeps moisture in where dehydration is a problem. Repeated tests have shown these coatings to be highly insect-resistant.

## Where can it be used?

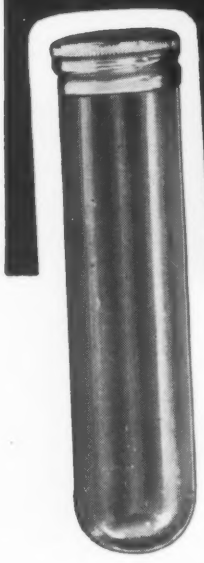
Wherever shelf-life is important, the Darex double-dip method can be helpful. It lets the product start its shelf-life not when first packed but only when the outer package is opened. It is particularly well adapted to volume production where progressive packaging can be profitably employed.

It is suggested for all moisture-sensitive food products packed in individual cartons and bulked in a larger double-dip unit. It can be used for cigarettes, small electrical and mechanical parts, and even for larger products such as typewriters for export. It can be used for bulk packages, such as for dried fruits. Its use is varied and restricted only by the limitations of good carton manufacture.

# DAREX *thermoplastic* COATINGS

A PRODUCT OF THE DEWEY AND ALMY CHEMICAL COMPANY, CAMBRIDGE 40, MASSACHUSETTS

YOUR PRODUCTS SHOULD BE *SEEN* AND NOT HURT



FOR POST-WAR DISPLAY-PROTECTION DEPEND ON

LUSTEROID VIALS AND TUBES

Here is a proved method of packaging that does two vital jobs in one:

1. LUSTEROID displays your product through its crystal-clear walls for eye and buy appeal.
2. LUSTEROID's strength and rigidity protect your product from harm in shipment, at point of sale and in use.

But that's only part of the LUSTEROID story! This lightweight plastic saves time, work and money. Its inherent strength eliminates the need for protective packing in shipment. Its "printability" means no labels to affix. Its colors—clear or opaque—give you all hues of the rainbow to work with. Sizes from ¼" to 1¼" in diameter—lengths up to 6". Cork, slip-on or screw-cap closures.

**Write for post-war details now.**

**LUSTEROID CONTAINER CO., INC.**

Formerly Lusteroid Division of Sillcocks-Miller Company

*Office and Factory*

10 W. PARKER AVENUE, MAPLEWOOD, N. J.

MAILING ADDRESS SOUTH ORANGE, N. J.

# Planes in envelopes

(***Continued from page 109***) is able to bridge at least a ¼-in. gap, and they claim to have been able to coat a solid mass on ordinary chicken wire.

The following table, prepared by Andrew Forgie of Better Finishes & Coatings, Inc., compares the properties of the hot and cold spray material:

| | *Cold spray* | *Hot spray* |
|---|---|---|
| M.V.T. (.010-in. film) | .25 gram per 100 sq. in. per 24 hours | .25 gram per 100 sq. in. per 24 hours |
| Low temperature flexibility | −20° F. | −65° F. |
| Heat stability | 180° F. | 240° F. |
| Ability to bridge gaps without tape | None | ¼ in. |
| Tensile strength | 2000 lbs. minimum | 2000 lbs. minimum |

Because of the pressing need for plane packaging and the limitations on vinyl materials, there has been little opportunity to extend the material or method to other products. However, considerable thought is being given to the subject and some experiments have been conducted.

The Army has experimented with the dipping of bolts and machine parts in the material, and intends to try coating machine guns. Better Finishes & Coatings is working out a method for automatically dipping small parts. Some interesting results also have been obtained by spraying the inside surfaces of wood export packing boxes, to provide a moisture-vapor barrier without the use of waterproof paper.

Postwar, the material has many interesting possibilities. It is expected that it may be used as a thin spray coating on furniture, refrigerators and the like to provide protection for shipping and storage without the use of paper wrappings. It may be used as an inside coating for tea boxes and sugar packages, or for any product that requires protection.

Present cost of the plastic solution is about $3.85 a gallon but it is expected that postwar it will be considerably lower.

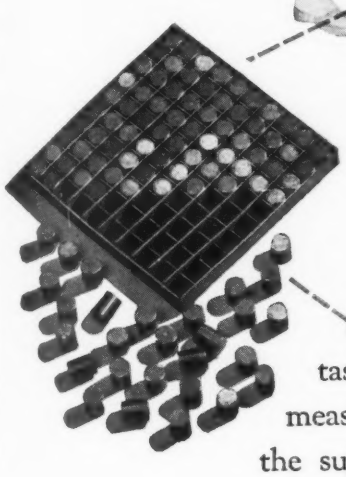
# Picture story wrappings

(***Continued from page 99***) of the product which it contains." J. P. Coats' threads, for instance, for which she had charge of the entire advertising campaign in Central Europe before the war, demanded a treatment entirely different from the papers for Altman and Kuhne candies or for the Christmas store wraps for Nieman-Marcus & Co. in Dallas which she has designed this year.

Art work alone, however, she says will not make a beautiful package. There must be complete cooperation between the artist and production man. The Altman and Kuhne packages, she believes, were not successful only by virtue of the art work, but also because Director Altman never underestimated the value of the best printing and paper stocks. In designing packages, she says, one has to remember that a product's eye appeal, stimulated by well-planned poster effect, is only the first step in attacking the consumer. Careful execution must satisfy further examination at close range.

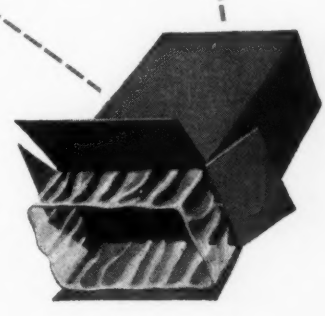
The exigencies of war have made imperative greater simplicity in the use of materials and pattern, thereby insuring greater unity between the form of the package and its contents. This organic unity, she says, merges two aspects of beauty into one. Obstacles that have been overcome by this unity should equip designers with the best possible training in overcoming handicaps to the basic principles of good design.

# *On With the War*
# —to Victory



Your sons and ours . . . on dangerous air missions, with Navy Task Forces, in lonely fox holes . . . daily risk life and limb. Can our devotion to the great task of winning the war be so much less than their last full measure? They give ALL . . . depending on us only to keep the supply lines unbroken.

Inspired by their example we, as a leading converter of Cellophane and Glassine, are dedicating our efforts and output first and foremost to the war. Food, munitions and supplies MUST reach our fighting fronts beyond the seven seas, free of contamination, dust, moisture, rust or corrosion in fast-sealed, waterproof cellophane bags and wraps.



**Our waterproof Cellophane Bags are approved for packaging military parts, Grade A, type III; Methods I and IA. Metal foil Bags available for Method II.**

**Our LOXTITE *protective* Partitions have been adopted to pack delicate and fragile military parts or small shells, etc. needing crash protection.**

**Our Bag Liners have replaced vital materials for packaging lard and vegetable shortenings as well as frozen and dehydrated eggs, vegetables, and other foods.**

Patents Applied For

*Buy Bonds*
SPEED VICTORY!

TRACO
*Packaging Perfection*

*If your product is one that will speed the victory yet to be won, our packaging experts and their war-centered ingenuity is freely at your command. Write today.*

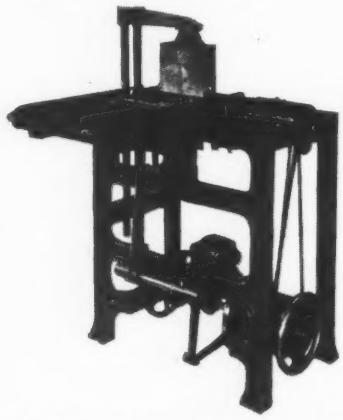
**TRAVER CORPORATION**
**Dept. MP11, 358-368 West Ontario Street, Chicago 10, Illinois**

# If Cost Is a Factor

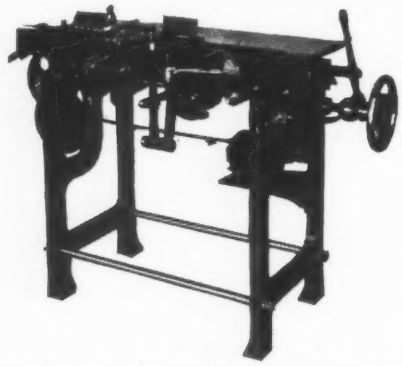
## *in your postwar packaging plans . . .*

**. . . get in touch with Peters and find out how widely Peters machines are now being used for packaging lard, shortening, crackers, frozen foods, macaroni, spaghetti, and in a wide variety of other highly competitive fields. Where cartoning costs count most, more and more firms are basing their postwar plans on Peters equipment to assure themselves of efficient, economical cartoning with no sacrifice in quality.**

**If cost will be a factor in your postwar packaging plans, send us a sample of the cartons you are now using and get the facts for yourself. No obligation.**



**This PETERS JUNIOR CARTON FORMING AND LINING MACHINE sets up 35–40 cartons per minute, requiring only one operator. After the cartons are set up, they drop onto a conveyor where they are carried to be filled. If several size cartons are desired to be handled, machine can be made adjustable.**



**This PETERS JUNIOR CARTON FOLDING AND CLOSING MACHINE closes 35–40 cartons per minute, requiring no operator. After the cartons are filled, they enter machine on conveyor and are automatically closed. Can also be made adjustable to handle several different size cartons.**

**If you require parts for Peters equipment that you already have, do not hesitate to let us know and we will give your requisition prompt attention.**

**PETERS MACHINERY COMPANY**
GENERAL OFFICE AND FACTORY
4700 RAVENSWOOD AVENUE, CHICAGO, ILL.


# *Filming tinplate*

(***Continued from page 133***) the flat before fabrication, but there is some risk of local damage to the film from handling during manufacture of containers. The best point of treatment appears to be after closing (and processing, in the case of foods) or just before packing for shipment. Although the solution used must be hot, 140 to 185 deg. F., it is not essential to heat the contents of a tinplate container. In the simplest and most effective procedure, the tinplate material is dipped for from 2 to 20 seconds, according to the temperature of the solution, and the adhering solution is dried in place. For a brighter finish, or where the treated tinplate comes into contact with foods, adhering soluble salts should be thoroughly removed by rinsing immediately, or after first permitting the adhering solution to dry. The latter gives somewhat better corrosion resistance as measured by humidity chamber and salt-spray tests but it is frequently inconvenient.

In pro-coating with lacquer, a camouflage color can be given the exterior of containers. By filming, the surface appearance is unchanged unless adhering solution is permitted to dry in place. This gives a duller or more non-reflective appearance, which may be desirable where reflectivity is an unwanted factor. The filming treatment forms an excellent base for adhesion of dip lacquers where severe storage conditions or color requirements make a combination treatment desirable.

This new treatment is being used successfully by a number of canners and fabricators of electro-tinned equipment in Great Britain, and it is undergoing trial in this country. Complete information on the composition of the solution and details of operation cannot be published at this time, but such information is available under Governmental "Restricted" classification. The Tin Research Institute in Great Britain and the Battelle Memorial Institute in the United States have aided users in applying the process to their particular conditions. A British patent covers the process, but no patent royalty or other condition is imposed on users by the Tin Research Institute.

# *Thank you, Mr. Tojo*

(***Continued from page 105***) will conclude that these films are nothing but inferior imitations of the substances which—despite shortages—have been developed in the Western World. They lack the moistureproof value and heat-sealing properties as well as the structural strength necessary for the treatment which Army rations receive.

The Japanese packaging methods, too, leave something to be desired. They are at a disadvantage, apparently, in respect to machinery for performing rapid filling and sealing operations, for obviously the seals are formed by hand, and the strings which close the bags are tied by hand. The net result is a ration package of very flimsy character that had better not be left out in the rain. It must be remembered, however, that excellent protection is provided by the lining of the case which holds a quantity of these ration packages. This is of metal, heavily coated with tin-plate which tests to a thickness of about two pounds per base box—don't forget that the Japs control practically the entire world supply of tin at the source. This metal case leaves to the unit packages merely the job of conveying the food packages from case to consumer.

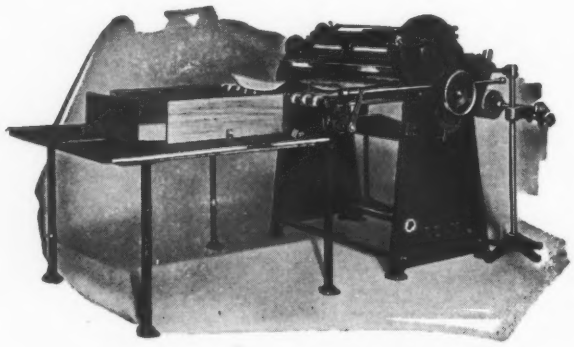
# HEEKIN CANS

LET HEEKIN HELP YOU WITH YOUR NEW METAL CONTAINER

ANY SHAPE · ANY SIZE · ANY COLOR · ANY QUANTITY

THE HEEKIN CAN CO., CINCINNATI 2, OHIO

*Many Great Nations Are Already Planning Post War Programs*
**as are also many business men—ARE YOU?**



**THE BECK SHEETER**

After "Unconditional Surrender" is a fact of history, you will want the highest productive Sheeting equipment obtainable, to meet competition. Your choice may be from the hi-speed Electric Eye machines for "spot sheeting" down to the more simple standard machines for plain work.

Write us to-day for to-morrow.

**CHARLES BECK MACHINE CO.**

13th & Callowhill Streets Philadelphia, Pa.

**DUNNFLEX**

*A concentrated "HOT-MELT" for*

**LAMINATING, COATING, FLOCKING, SEAM DOPEING**

Liquifies at 130° F. May be thinned with hot water for control of spread, penetration and set. Is thermo-plastic—can be made thermo-setting.

Has inherent flexibility—complete resistance to animal, mineral and vegetable oils; greases; aromatic and aliphatic hydrocarbons; primary, secondary and tertiary alcohols.

**THOMAS W. DUNN CO.**
*Sole Manufacturers*
546 GREENWICH ST. NEW YORK CITY 13, N. Y.

# The Aldens Family

(*Continued from page 112*) vidual items. The second is the suggestion-selling insert designed to sell additional lines to Aldens customers. Here again, the mail-order business must utilize the printed word to accomplish what the alert retail clerk does in her conversation with customers. The third insert is a more elaborate production—the "Alden Aid." This is used for merchandise on which more complicated instructional material is required. It comes up chiefly in connection with hard-line merchandise. Format has been established to maintain Aldens and merchandise identity. Art for the front-page box remains unchanged. But the background illustrated handling of the front page changes with the type of merchandise covered in the Alden Aid.

The Aldens co-ordination program is fluid. It seeks continually to point up and improve on past performance. That it has progressed as much as has been evidenced in this report is entirely due to enthusiastic housewide cooperation.

# New vinyl materials

(*Continued from page 132*) ment permits, there is a definite advantage in coating or casting from hot solutions, as workable concentrations at 158 deg. F. are approximately double those obtainable at normal room temperatures.

In the casting of film, the resin solution and the casting surface should be adjusted to the same temperature. When using methyl ethyl ketone solutions, a temperature of 120 deg. F. is enough below the boiling point of the solvent to prevent bubbling and should not be exceeded until about 95% of the solvent is evaporated. Forced air circulation aids greatly in removal of solvent but must not be so violent as to produce waves in the surface of the partly formed film.

The remainder of the solvent should be evaporated at temperatures of 210 to 275 deg. F. This operation is more time-consuming than the preceding one and it is necessary to remove the last traces of solvent only if optimum properties are required in the film.

The quality of the coating or film can further be improved by fusion of the solvent-free deposit. This operation, which requires a momentary heating at temperatures of 275 to 300 deg. F. expedites the formation of a continuous film, helps to prevent residual shrinkage effects, and in a sense case-hardens the coating or film. This heating, if performed very quickly, can be carried up to 365 deg. F. with benefits resulting from more complete removal of the solvent. To strip the dried film from the casting surface it must be cooled to a temperature of approximately 105 deg. F. On the other hand, in the coating of paper it is only necessary to cool to a temperature of approximately 175 deg. F., which is below the threshold of heat sealability.

The technique of casting or coating with Geon latex differs from that with resin solutions in that the fusion operation is not optional but quite essential. This is necessary because the dispersed system consists of discrete particles which must be merged in order to create a truly continuous film. In evaporating the water from a latex deposit, the bulk of it should be removed at a temperature not higher than 175 to 195 deg. F. to prevent blistering. If the temperature is raised to the fusion point of the resin (275–300 deg. F.) before all of the water is evaporated from the latex, the fluxing of the resin is made simpler and processing becomes continuous.

The distribution of Geon resins is at present restricted by

# O DAY IS COMING

D Day was thrilling. Our V Days will be delirious. But O DAY will be the real day for the service man. O Day is the day on which he will be mustered out of service.

To be ready to put that man back on his job when he comes home will require advance planning. You will have plenty of last minute planning to do but your packaging problems can be solved right now.

Let us bring your packaging up to date. Packaging has made great strides since the war started. The new materials and techniques developed during the war may revolutionize your packaging set-up. Old Dominion's engineering and creative staffs are already working on new packages for many of our clients. Let Old Dominion make a survey of your packaging needs now, so that our recommendations will be ready for you by O Day.

Call On

*Sift-Proof* POWDER BOX . . .

## OLD DOMINION BOX COMPANY

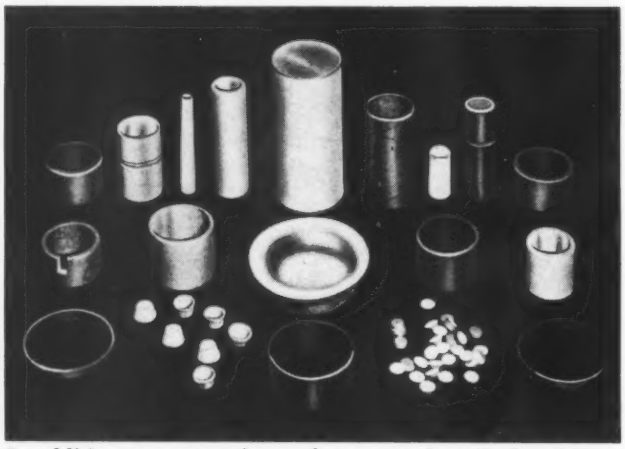
CHARLOTTE, NORTH CAROLINA

PLANTS IN NINE SOUTHERN CITIES

*Folding Cartons • Set-Up Boxes • Convolute • Spiral Wound and Corrugated Containers*

"THE SOUTHERN BOXMAKER WITH A NATIONAL REPUTATION"

Guard against damage in intra-plant handling or during shipment; save time and work in packing operations. Tubes made to your requirements in diameters from ⅜" to 6"—any length—from kraft, chipboard, special compositions; available waxed or plain. Write for complete information.



In addition to paper tubes and cans—as described and illustrated above—we also manufacture a complete line of **packaging envelopes** for holding small flat parts; metal top envelopes for secure fastening and convenient re-opening; waterproof and greaseproof envelopes to meet all specifications; duplex shop-order envelopes with protective glassine panels; **industrial gaskets** . . . paper, felt, cork, asbestos, synthetic rubber, leather, or special compositions; **die-cut products** . . . produced by rotary press, platen press, punch press, or drawing methods from paper, felt, cork, special compositions; **Saf-T-Pak boxes** specially designed to individual requirements for the protection of small precision parts and other fragile items easily damaged in shipment.

**PIERCE PAPER PRODUCTS CO.**
2730-D AUBURN STREET, ROCKFORD, ILLINOIS

the War Production Board to the most critical of war applications. However, these restrictions will gradually be eased and finally removed so that eventually the resins will be available for all types of usage. At present it is possible to obtain the Geon materials in limited quantities for experimental purposes, thus permitting converters to make a thorough appraisal of the commercial applications.

Among the possibilities is the introduction of the latex as an integral part of paper stock to produce a high wet-strength paper or a resilient shock-resistant member. Although probably the greatest usage will lie in formation of grease resistant wrappers or other utility items, the qualities of abrasion resistance and susceptibility to embossing suggest decorative coatings. It is possible to prepare unsupported sheet, or paper or fabric coatings which are practically indistinguishable from leather, but which surpass this natural product in resistance to scuffing, and action of water, oils, mildew, etc.

Among other applications will be the creation of specialty and novelty containers by molding processes. These may make use of plain molded sheets or of complicated forms.

Extruded plastics may also be used in fabricating containers of unusual design. In selecting compounds for these operations, the possibilities of variation in hardness are almost unlimited. Clean, bright colors or delicate pastel tints can easily be obtained in Geon plastics.

Bottle closures can be effected either by the use of coated papers or by flowed-in gaskets based upon the latex. In many cases it will be preferable to apply a protective coating to a fabricated container and sprayed latex suggests itself.

Although allocation restrictions have not yet permitted widespread introduction of Geon resins in the packaging field their value and adaptability have been demonstrated by military usage and assure them a place in the industry.

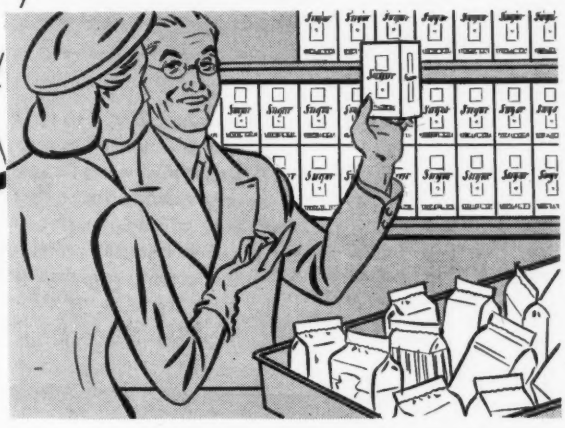
## War lessons—

(*Continued from page 85*) on the base, and the sides, end and top form a cover for the contents and provide for stowage on top of the crate. The connection of the cover to the base must be very strong, especially when the crate is being handled by grab hooks under accelerated motion. A very frail connection with resultant failure of the crate is shown in Fig. 9.

Diagonals are very essential to satisfactory performance of sheathed crates and this important requirement is sometimes ignored. When that is the case, the typical failure shown in Fig 10 is very likely to occur. In order to be effective in all directions of application of load, crossed diagonals should be used in the panels of the crates. Crates not exceeding 24 in. in height usually require no diagonals. If plywood is used instead of ordinary sheathing, no diagonals are required.

Wooden boxes—nailed, plywood and wirebound—are called upon to carry much of the packaged goods that goes overseas. The performance of these shipping containers has been satisfactory for many years and, with considerable stiffening of specifications, they have been doing an adequate overseas job. If any comment should be made regarding these containers it would be that fastenings for putting the faces of the boxes together be designed to provide *adequate* strength and that more than usual care be exercised in assembling and closing the boxes. The need for this is evident because in shipping overseas more serious hazards are encountered in handling cargo than in domestic shipping. An example of this is shown in Fig. 11, where a nailed wooden

# BAGS PROTECT . . . . BUT NEED CARTONS FOR FRONT-LINE PACKAGING



**The right bag of the correct material can seal flavors in, keep odors out. It will hold moisture uniform. It won't leak or fracture easily.**

**But the right bag in a folding carton does much more. This combination means eye-catching displays, 100% dealer shelf use, ruggedness, less waste and breakage, convenience, consumer preference.**

**That's why fast selling merchandise like tea or tobacco, dessert powder or bicarb, use cartons of smooth, slick Ridgelo Clay Coated boxboard. It will live up to the quality of *your* product. And your boxmaker can supply it. Ask him!**

**Ridgelo**
CLAY COATED
REG. U.S. PAT. OFF.
**BOXBOARDS**
*Make a lot of difference*—FOR A LITTLE
MADE AT RIDGEFIELD, N. J.
BY LOWE PAPER COMPANY

KEEP DOING YOUR SHARE IN THE WASTE PAPER CAMPAIGN

Representatives: Bradner Smith and Company and Mac Sim Bar Paper Company, Chicago • H. B. Royce, Detroit
Gordon Murphy and Norman A. Buist, Los Angeles • A. E. Kellogg, St. Louis • Philip Rudolph & Son, Inc., Philadelphia

**YOU plan the Postwar Product...**
**Let DENNISON plan the System Tag**

**PREWAR...**

Dennison System Tags simplified retail inventory control of occasional chairs; furnished payroll records in mills making silk and nylon stockings; by quick codes, boiled down operating instructions on rugs and automobile tires and glamour-giving knitwear.

**WARTIME...**

Dennison System Tags schedule the multiple unit production of anti-aircraft range finders; provide inspection control of tank parts; furnish warehousing, shipping records for aircraft engines; identify other items at various stages of processing or assembly.

**POSTWAR...**

Dennison System Tags may be needed tomorrow to help cut short the time when your production line shifts from bombsights to bedside radios. You may want a fast spot-check on subassemblies at a dozen points in their evolution. Possibly you will want to give a series of instructions, coded, to speed new products. Start thinking now, about the jobs system tags can do for you.

**DON'T PUT IT OFF—PUT IT UP TO**

**Dennison**

**1844 ONE HUNDREDTH YEAR 1944**

Many Dennison System Tags are especially designed tag forms which go through a Dial-Set Printer. Variable operating information is printed on detachable sections, speedily—accurately. Dennison experience and facilities in this field have been multiplied and broadened by specialized wartime problems. Let Dennison plan today the system tags and production tickets that can be manufactured tomorrow. Write Dennison, 227 Ford Ave., Framingham, Mass.

**TAGS · LABELS · SEALS · SET-UP BOXES · MARKING SYSTEMS · PAPER SPECIALTIES**


box of sturdy construction is seriously wracked and broken open due to the sling-load accidentally striking the coaming on the ship.

One further comment should be made about wooden boxes generally. It has been found that the use of metal reinforcing straps is indispensable but that, unless the straps are correctly applied, the benefit of the straps is not realized. In order to provide better assurance that metal reinforcing straps perform adequately, the straps should be stapled to the box whenever the thickness of the boards permits. Reports from the field have indicated improved performance of wooden boxes since straps have been stapled to the boxes.

Some early shipments in plywood boxes came to grief because of delamination of the plywood. Packing box grade of plywood is manufactured by using animal or vetegable glues almost exclusively. The glue lines are attacked by bacteria and molds and deteriorate rapidly, resulting in delamination of the plies. Toxics have been developed for addition to these types of glues so that the resultant glue line gives satisfactory service for at least two years.

Plywood boxes going forward to the tropics and subjected to unusually hazardous weather conditions have been found to fail due to actual deterioration of the plies making up the faces of the boxes. Toxic applications to the faces of plywood panels combat successfully this deteriorating effect.

Large proportions of shipments going overseas in domestic grade of fibreboard boxes arrive in damaged condition. Shipments going overseas in fibreboard boxes having considerable wet strength arrive in excellent condition, even under very severe climatic conditions. Conclusive evidence is at hand to indicate that only fibreboard boxes having considerable wet strength should be used. When the contents do not support the box, high wet strength is required.

Closures made with ordinary adhesives have failed badly in overseas shipment and it has been found that only highly water-resistant adhesives perform satisfactorily.

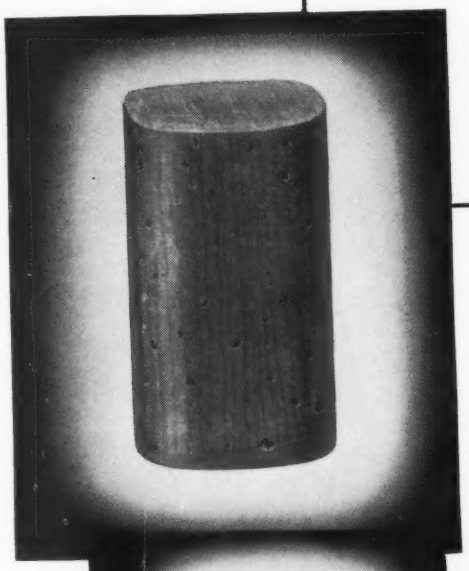
The effect of moisture on low wet-strength fibreboard boxes and inadequate adhesives is shown in Fig. 12. In some instances additional metal strapping applied to boxes of doubtful strength improves performance considerably.

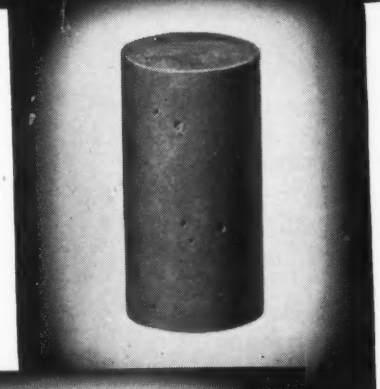
Slack barrels are especially well adapted for shipment of certain products, but in applying this type of container to overseas shipments, reports of poor performance were received. Nearly all damage was caused by failure of the heads. By increasing the thickness of the heads slightly, and by adding a wide batten across the grain of the head, performance has been improved to such an extent that damage is less than is allowed commercially.

The war has brought about the use of multi-wall shipping sacks for many commodities not ordinarily going overseas in this type of container. As frequently occurs, not too much attention was given to shipments going forward in sacks so that they would withstand the severe conditions of handling and storage to which the containers are subjected. As a result, various kinds of failure, as shown in Fig. 13, were common. With the co-operation of the shipping sack industry satisfactory specifications were prepared and excellent performance is now being realized.

Improvement in multi-wall paper shipping sacks has been achieved especially by the use of wet-strength paper for the outer ply and, in most cases, by the use of an asphalt-laminated sheet for the inner plies. These additions permit handling of the package when wet and, at the same time, provide protection to the contents against moisture. It has also been found to be beneficial to limit weights to 50 to 70 lbs. on bulky items and to 100 lbs. on other items.

# MUNDET CLOSURE SERVICE helps to Prevent Sealing Problems





**Closure Service** is more than fitting a cork to a bottle. Our purpose is to secure the most practical cork sealing for the individual product. Cork in itself is one of nature's most unique materials, but, because it is produced and processed in different grades, for so many purposes, the application of cork to closures must be by specialists who know cork from long experience. Cork has been our business for 79 years. If you have tough requirements in sealing we may be able to help you. Mundet Cork Corporation, Closure Division, 65 S. Eleventh Street, Brooklyn 11, N.Y.

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**ATLANTA**
339-41 Elizabeth Street, N. E.

**BROOKLYN 11**
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**JACKSONVILLE 7, FLA.**
1212 Mary Street

**KANSAS CITY 7, MO.**
1428 St. Louis Avenue

**LOS ANGELES 31**
1850 North Main Street

**LOUISVILLE 10**
Kentucky Bottlers Supply Co.

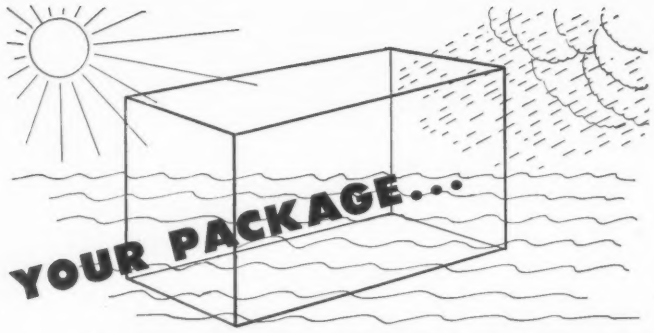
**NEW ORLEANS 16**
315-325 N. Front St.

**PHILADELPHIA 39**
856 N. 48th Street

**ST. LOUIS 4**
2415 South Third Street

**SAN FRANCISCO 7**
440 Brannan Street
*also* J. C. Millett Co.

***In Canada:*** Mundet Cork & Insulation, Ltd. 35 Booth Avenue, Toronto




...IS AS STRONG AS ITS ADHESIVE

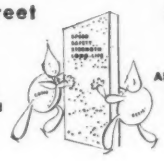
★ You who supply food, drugs, parts, chemicals—or other packaged materials—to the Armed Forces or to Lend Lease, may find one of NATIONAL CASEIN'S approved Waterproof Adhesives worth consideration and test.

Uniformly high in quality, readily available, backed by 30 years of service to industry, NATIONAL CASEIN'S Urea Formaldehyde is Laboratory Approved as a water-resistant adhesive for sealing fibreboard boxes

**NATIONAL CASEIN SALES**

609-619 West 80th Street Chicago 20, Illinois

SUBMIT YOUR ADHESIVE PROBLEMS WITHOUT OBLIGATION



ALL TYPES CASEIN—HOT OR COLD RESIN GLUES



Do You Want

**Key Western Distribution?**

If you have a packaging product for which you require the strategic distribution and service facilities of a well-balanced, aggressive sales organization, your thorough investigation is invited. A soundly-financed Western distributor with a well-knit sales force and twenty years of experience in representing leading national manufacturers, can handle a limited number of new packaging products. Key locations for offices and warehouses at Los Angeles, Fresno, San Francisco, Portland and Seattle assure prompt service to any Western point. For details, write:

**BOX NO. 255 MODERN PACKAGING**
**122 East 42nd Street**
**NEW YORK 17, N. Y.**

*(Your inquiries will be treated with strict confidence)*


LONDON LETTER

# British food labeling order

LONDON—The British Ministry of Food has issued a new Labeling of Food Order to protect the public against the sale of improperly labeled foodstuffs.

"We believe," said an official of the Ministry in making the announcement, "that in this order a real step forward is being made towards insuring that the purchaser of manufactured foods will get what he or she expects to be getting when they buy a packet of foodstuff."

The order provides that from January 1, 1945, the labels of pre-packed food sold at retail must show:

(1) The name and address or the registered trade mark of the packer or of the person for whom the food has been packed.
(2) The common or usual name of the food.
(3) In the case of food containing more than one ingredient, the common or usual names of the ingredients.
(4) The minimum quantity of food in package.

Behind this order, which has the approval of all reputable manufacturers, lies the story of a fight against a war-time racket—the fraudulent sale to the public of so-called "substitutes" bearing labels which had no relation to the contents of the package.

As early as 1941, the press and advertising men were concerned over the situation, and a Food Substitute Order was promulgated in order to deal with it.

This order was effective in a number of cases, but fell short in being unable to deal with commodities which were not described as "substitutes."

The Ministry of Health was given certain powers over the vending of food, but took no action owing to difficulties arising from the war. Finally, in October last, an Order in Council transferred these powers to the Ministry of Food, and enabled the Ministry to restrict claims as to vitamin and mineral contents of packaged foods.

The new order covers the whole field. Not only must all ingredients be listed but also, where there is any claim that the product contains either vitamins or minerals, there must be full statement of the identity thereof and the quantities therein.

The actual quantities or proportions of ingredients need not be stated, except for minerals and vitamins. This is to safeguard makers' secrets. In addition, the Ministry will freely advise manufacturers regarding label changes.

Enforcement of the order will be in the hands of local Food and Drug authorities, but the consent of the Ministries will be needed prior to prosecution (except in the matter of weight-shortage), as the Ministry is anxious to avoid useless prosecution of the small dealers, preferring to attack the trouble at its source.

The Order does not apply to patent medicines, as these are outside the province of the Ministry of Food.

**If MODERN PACKAGING is late**

**Due to production and transportation difficulties beyond our control it is quite possible that your copy may be reaching you later than normally. If so please bear with us during this emergency period.**

# The "Good Ship Hopewell" was there!

**When the invasion barges landed on the coast of France, it is a safe bet that the "Good Ship Hopewell" was there also, carrying vital items of war material. For, untold numbers of things needed in the invasion are being safely packed and transported in the tough Fibre Board that bears this famous trade mark.**

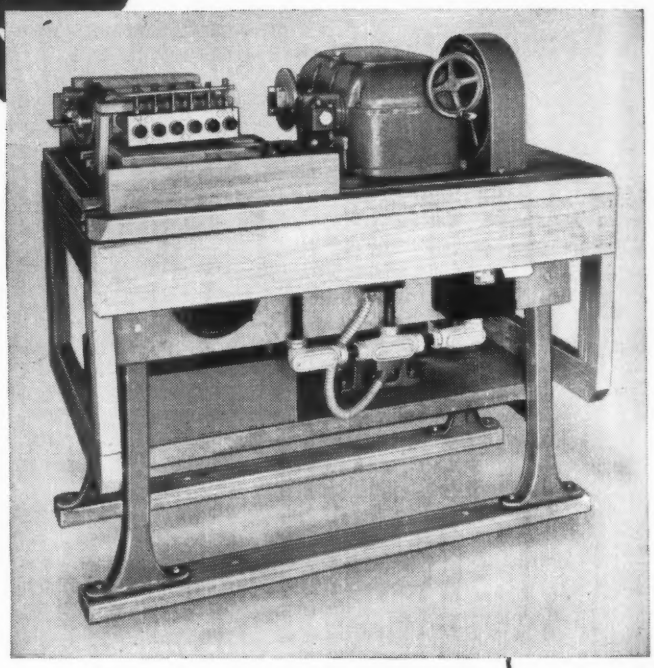
**Hopewell Kraft is just the sort of container material to call on when the going is really tough. That is being proven on every fighting front in the world today.**

Originators • Creators

**HUMMEL-ROSS FIBRE CORPORATION**

Hopewell, Virginia, U. S. A.

# THIS "ENVELOPE" will be opened again *"on the other side"*



American Bosch Corporation Motor Driven Fuel Injection Equipment Test Stand, mounted on skids for shipment.

This American Bosch Test Stand for Fuel Injection Equipment must be ready to go to work *immediately* upon arrival overseas.

The entire unit, packed in a carton, is enclosed in a giant vapor-moisture barrier bag made by U.S.E.

U.S.E. products range from the "letter box" variety of envelope to the kind of container you see above. They're protecting machinery, arms, ammunition, food, drugs . . . in storage and in travel to all parts of the world.

U.S.E. Engineers can provide your product with a war or postwar protecting package . . . and are ready to discuss the job with you at any time.

P-5

**UNITED STATES ENVELOPE CO.**
*General Offices*
**SPRINGFIELD 2, MASSACHUSETTS**

Entire Test Stand, enclosed in carton, is encased in U.S.E. giant bag specially prepared to resist water-vapor-moisture.

Top of bag is folded in, heavily waxed and heat-sealed, forming a strong permanent wrap that will protect the Test Stand in its travels anywhere. The sealed package is then enclosed in a wooden case.

**U·S·E** *protective packaging*

*Products of United States Envelope Company include* WAR PRODUCT PACKAGING • TRANSPARENT CONTAINERS • ENVELOPES WRITING PAPER • LINWEAVE PAPERS • NOTE BOOKS • PAPER CUPS • TOILET TISSUE • PAPER TOWELS

# Have you reserved your copies of the 1945 PLASTICS CATALOG?

A reminder to all firms and individuals who need plastics catalogs: The 1945 edition is now on sale and the flood of orders mounts higher with every passing day.

With reconversion in sight, interest in plastics has hit a new fever pitch and the publishers anticipate that the forthcoming edition will not be large enough to fill all the orders.

Each year more copies of the catalog have been printed, but there have never been enough to go around. We urge you to insure getting your copies by ordering *immediately*.

## SPECIAL FEATURES OF 1945 PLASTICS CATALOG

- *More than 1000 pages.*
- *More than 150 separate articles on every type of plastic material, plastics manufacturing, mold making, etc.*
- *New articles on all the latest plastic materials, including — Silicones, Polectron, Polyethylene, Furane resins, Resorcin formaldehyde resins and adhesives, Lignin, Phenolic sisal, Geon, high temperature-resistant styrene, polyfibre and luminescent pigments.*
- *A brilliant gallery of full color illustrations of consumer plastics.*
- *Manufacturers' samples and designers' plans for post war plastics.*
- *New articles on processing materials, injection molding of thermoplastics, molding with high frequency heat, blowing thermoplastics, etc.*
- *All eight famous charts revised and enlarged — including plasticizers, solvents, synthetic fibers and synthetic rubbers.*

**Price — $6.00** per copy — $7.00 Foreign — $8.00 Canadian (including Canadian Duty).

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122 East 42nd Street • New York 17, N. Y.

*No*. . . we can't say we make cartons which actually "whistle" at customers from the shelf or counter . . . or grasp them by the hand. But into our creations is built a merchandising appeal and attraction which literally *compels* attention.

*Our* post-war planning has been under way for months. We know *you*, too, *must* be alert in post-war thinking.

Why shouldn't we get together and "swap" a few ideas as to how *your* product can again move off the consumer shelf by Peacetime "Power of Attraction?"

ACE CARTON CORP. ACE CHICAGO Creators

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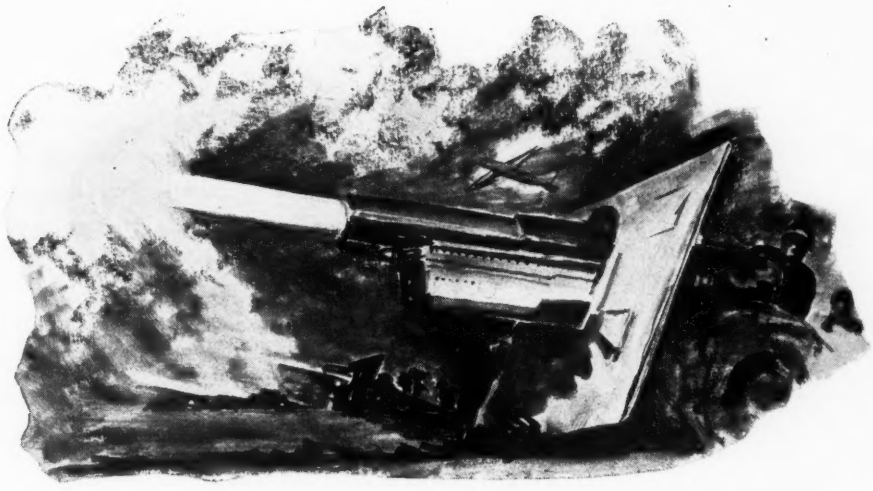

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Rapinwax grease proof wrapping papers, distributed in the metropolitan area by Criterion Paper and Twine Company, are made to insure the protection of highly polished metal surfaces. Their primary purpose is to insure grease proofness and moisture proofness in the protection of precision parts in guns, tanks, trucks, and aircraft.

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**VOTE**
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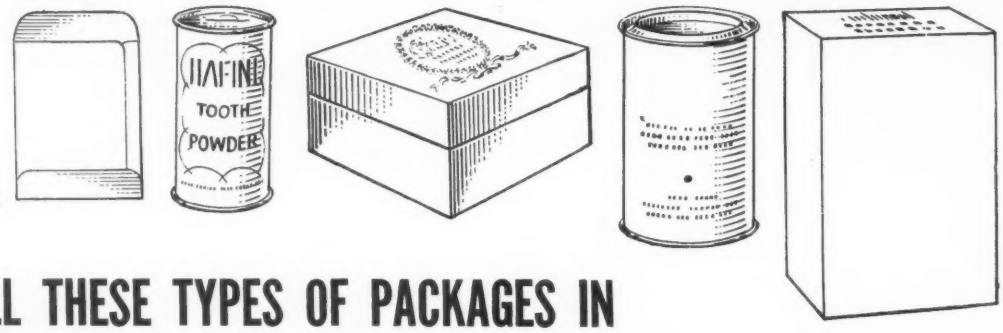


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We do your mixing, filling, weighing, labeling, etc., on high speed automatic equipment.

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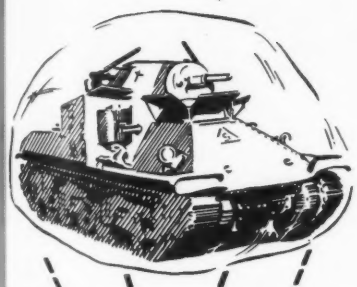

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**ARCC** materials help to prepare it for the long ocean trip.

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FOR PACKAGES

*WATERPROOF AND WATER REPELLENT.*
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Clearseal plastic coatings will keep moisture out or hold it in. Clearseal coatings seal themselves and toughen paper or fabric to increase serviceability for various purposes. Now you can have bags that hold water, syrups, dehydrated foods, drugs. You can have cartons, hermetically sealed, to completely protect costly precision parts from rust corrosion or other ravages of nature. Clearseal plastic coatings on bottle cap liners or bowl covers offer advantages beyond anything previously on the market. Discuss your packaging problems with us. Inquiries invited.

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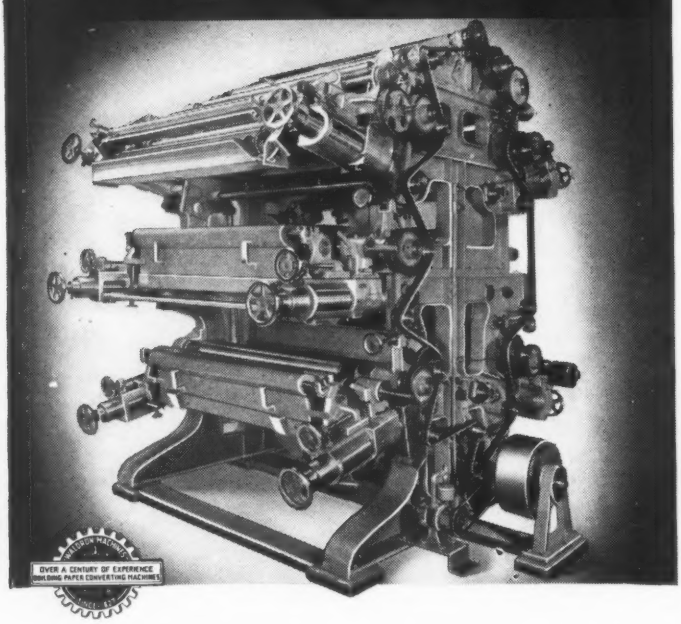

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They're Ice Proof, they're Weather-Proof and operate equally well on any automatic labeling machine.

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**TAMPERING AND MOISTURE INGRESS**

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Filma-Seal* keeps the moisture out — seals the original qualities *in*—exposes tampering, prevents contamination. The seal is in the screw cap and you apply cap and seal in one operation. The seal stays on the bottle, safeguarding your product until the consumer peels off the inner seal.

**Send today for illustrated checklist of glass closure problems solved by Filma-Seal.***

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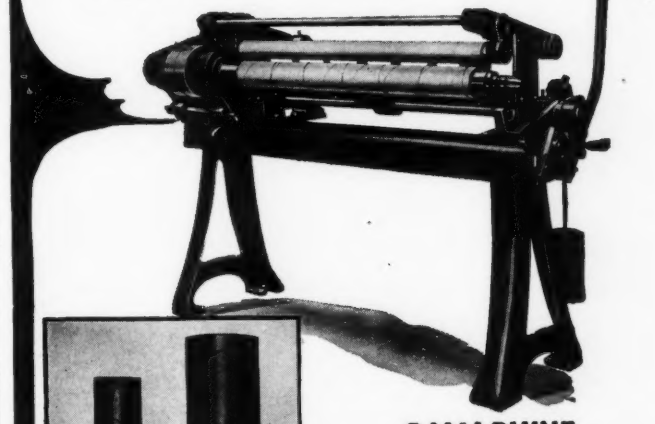

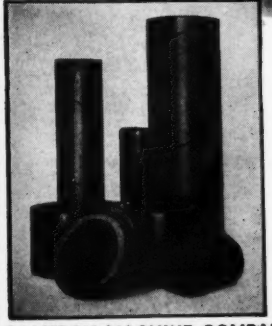

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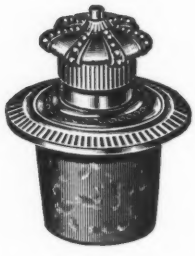
**CAN & BOTTLE CLOSURES**



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# STOCK ORDNANCE PACKAGING

The following items all meeting applicable government specifications are available for immediate shipment from warehouse stocks upon receipt of order.

- T-247s heat sealed Grade A Type II greaseproof containers
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Also waterproof asphalt duplex case liners and bags from our own bag making department. *Very prompt deliveries.*

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*Specialists in Special-Purpose Paper Packagings*

# Your designers can do wonders with FLOCK

Gives appearance of genuine
**SUEDE • VELVET • VELOUR**
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Coating paper with flock produces an infinite variety of richly colored surfaces with all the appearance and feel of velvet, velour, suede leather and similar effects. The cost is so reasonable as to make the use of flock entirely practical for deluxe boxes, souvenir programs, catalog covers, novelties, display containers, etc. Put samples in your designer's hands now!

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*Developers and Manufacturers of Printing and Coating Flock*

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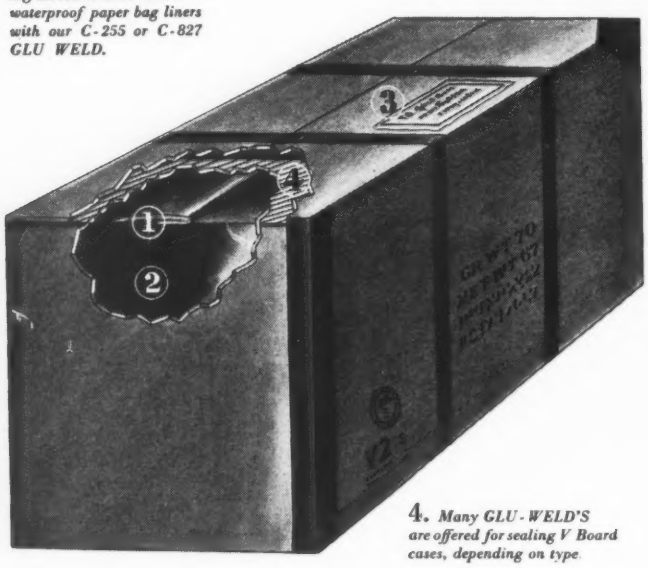
***Our Definition:*** A package which is correct for overseas shipment of war materiel is one to which has been applied principles of common sense; one which, in all possible cases, exceeds rather than shades the requirements of the specifications involved; one in which equal attention has been given to exterior and interior containers, blocking and bracing, corrosion prevention, and permanent marking; one in which a shipper takes pride in his assurance that despite rough handling, outdoor storage at the ends of the earth and transportation of all types, his product will be READY FOR WAR.

**1-2.** *We recommend sealing all seams and closures on waterproof paper bag liners with our C-255 or C-827 GLU WELD.*

**3.** *We recommend attaching and overcoating labels on fibreboard with B-719 waterproof lacquer*




**4.** *Many GLU-WELD'S are offered for sealing V Board cases, depending on type*

*IN THE EAST*

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**BAG HEAT SEALING MACHINE**

**MORE ECONOMICAL BECAUSE:** it requires no pins, staples or other supplies It gives a permanent, positive seal merely by application of pressure and heat. Uses only 150 watts of electricity

**MORE EFFICIENT BECAUSE:** *Kick-Leg* foot lever exerts 10 times as much pressure at jaws as applied by foot Top jaw is floated on springs that prevent undue wear on jaws and enable the operator to apply proper pressure with a minimum of effort. Positive thermostatic control assures correct temperature Send your bag for us to seal

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CRCO - New Way Labeler with Uncumulating and Accumulating Feed Table operating on gallon glass jugs.

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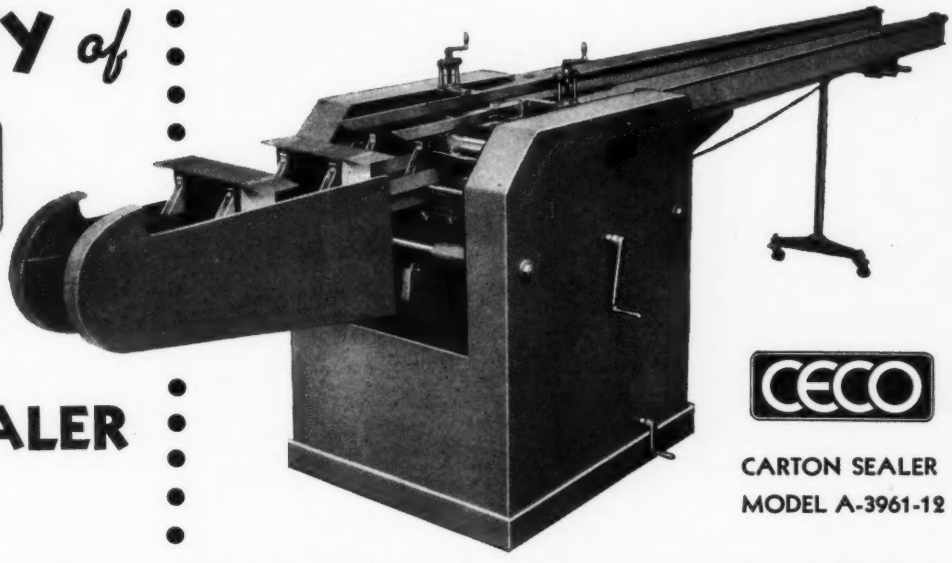
# SIMPLICITY of CECO Adjustable CARTON SEALER



CECO
CARTON SEALER
MODEL A-3961-12

**Gives you these important advantages**

*Lower First Cost*
*Lower Operating Cost*
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A Ceco Adjustable Carton Sealer gives you more package production capacity per dollar invested because of its extreme simplicity and flexibility. Simultaneously seals both ends of any size carton from 1″ to 12″ deep, from 30 to 120 per minute. No special experience is required for operation. No complicated gadgets to get out of order. An inexperienced operator can maintain and adjust machine setting for different size cartons without special tools. Get details of this flexible, low cost, high production machine today.

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*Won't scratch off, won't wash off, won't rub off. Applied in any color, or any number of colors, to all shapes and sizes of containers and closures. Ideal for plastics and glass — also other hard-to-decorate materials. Transforms stock mold containers and closures into individualized packages with your trade mark or name or decoration permanently applied.*

**Creative PRINTMAKERS GROUP**

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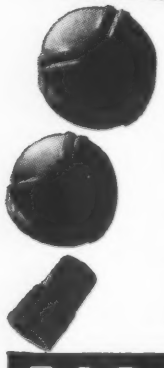
*Surface Decorators for the Packaging Field*

**NEW** *Completely Automatic* **CLOSURE PRESS**

STOKES 50 ton Hydraulic Closure Press



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**FULLY AUTOMATIC . . .** Split-second timed cycle, instrument-controlled for indefinite repetition. One man attends a battery of presses.

**COMPLETELY SELF-CONTAINED.**

**IDENTICAL CLOSURES** due to uniform timing and elimination of human error.

Write for further details.

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with the famous

## DOUGHBOY

Rotary Hot Krimp

## SEALER

- √ SEALS ALL HEAT-SEALING MATERIALS
- √ SEALS BAGS, POUCHES OR PACKAGES OF ANY SIZE OR WEIGHT
- √ THERMOSTATIC HEAT CONTROL
- √ SEALS 240 LINEAL INCHES PER MINUTE

Standard Model..... $199.50
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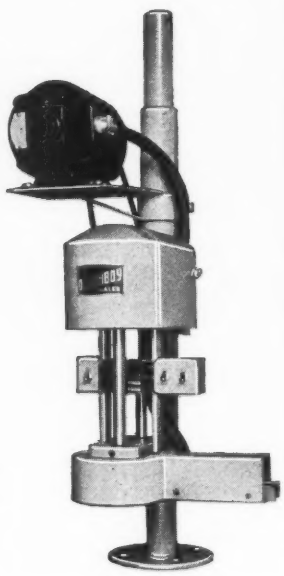
Good Delivery on High Priority



**DOUGHBOY TOGGLE-JAW**
A High Speed foot pedal sealer with positive sealing pressure and feather-touch foot pedal. Rheostat control.
3 SIZES—$98.50 UP

PACK-RITE MACHINES, 828 N. Broadway, Milwaukee, Wis.

Please rush complete information on your ☐ Doughboy Rotary Sealer ☐ Doughboy Toggle Jaw.

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MP 944

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### *for an Experienced Production Man*

**A well-established** and expanding food company, located in New York State, manufacturing both canned and packaged products, is looking for a man well grounded in production work. He must have had experience in production planning, raw material handling, Union and employee relations, and the maintenance of high standards of cleanliness and safety.

This position offers a competent man a good salary with an excellent opportunity for advancement.

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**Write today to:**
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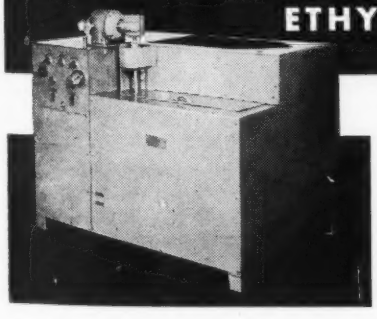
# YM PLASTIC COATER

## FOR MELTING AND DIPPING ETHYLCELLULOSE



***Speeds up***
**HOT DIP COATING**
***to protect Parts and Tools***

● All requirements set up by manufacturers of ethylcellulose are met by the YM Plastic Coater. Check these features—

1. *Indirect heating with oil.*
2. *Agitation.*
3. *Constant level in dip tank.*
4. *Removal of surface film.*
5. *Thermostatic control.*
6. *Permits hand dipping.*
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In one plant, a YM unit is dipping over 4000 spark plugs per hour. Advise the pounds of ethylcellulose you will want to melt per hour and size of dip tank needed. We will send you a proposal. Many sizes and capacities available.

**YOUNGSTOWN MILLER CO., SANDUSKY, OHIO**
*Manufacturers of YM Oil Reclaimers and YM Oil Heating Tanks*

# A Powder Filler FOR YOUR WARTIME NEEDS

This modern stream-lined Consolidated Powder Filler meets every requirement of wartime packaging. It is designed for high-speed filling of spice, powdered and pulverized food, drug and insecticide containers.

The Consolidated is a fully automatic machine and handles the new fiber cans just as efficiently as it does tin containers. It handles any size from 2 oz. to 40 oz. and fills fifty 2-oz. containers or twenty 16-oz. containers per minute.

A screw auger carries the material from the hopper to the can and measures it accurately at the same time. The unit handles any non-free-flowing material and the entire operation is practically dust-free.

If you have a packaging problem, let a Consolidated Packaging engineer go over it with you.

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Engineer or designer wanted by mail order house with retail interests. Knowledge of sources important—specific experience desirable. Post war future. State qualifications in full and salary desired. Box 254, Modern Packaging.

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PACKAGING ENGINEER with 15 years of successful selling and developing of folding cartons, and possessing the ability and experience to supervise and assist in operating a business is interested in becoming associated with a progressive manufacturer as partner. Party now residing in the East. Box 256, Modern Packaging.

### FOR SALE

Complete equipment of a Paper Tube and Paper Can plant, consisting of the following machines:
3 tube winding machines
2 recutters
2 paper can crimpers
2 automatic labelers
2 metal conveyors
Will sell as one lot or individually. Can be inspected in operation. For further particulars Address Box 257, Modern Packaging.

MECHANICAL ENGINEER: Young graduate mechanical engineer to work in Technical Department of large bag manufacturer in South. Experience in paper, paper converting or packaging industry desirable. but not necessary. Good opportunities for advancement now and after the war. Give full details in first letter regarding experience and draft and release status. Those currently engaged in essential plants cannot be considered. Box 248, Modern Packaging.

WANT TO PURCHASE NEW OR USED 3 OR MORE COLORS 30" WEB OR OVER ANILINE OR OIL ROTARY PRINTING PRESS FOR CELLOPHANE, FOIL, GLASSINE, ETC. SEND FULL PARTICULARS MOHAN CONTAINERS COMPANY, 1107 E. 8th STREET, LOS ANGELES 21, CALIF.

### FOLDING BOX MANUFACTURER

When peace time surpluses come, you will be vitally concerned with moving tonnage. Our organization is young, dynamic, creative, and financially responsible. We have sold folding boxes to a specialized trade in the Metropolitan New York area, amounting to $250,000 annually, in the pre-war past. We have outgrown our present connection and are seeking a permanent tie up with an efficient, hardhitting outfit, looking for a real post war customer. Box 258, Modern Packaging.

WELL ESTABLISHED commission merchant in Havana desires to make connections with American producers of various types of packages and packaging material. Thoroughly experienced along these lines with highest American references. Quite satisfied to develop connections now for post-war business. Box 263, Modern Packaging.

### SILVERWARE CHESTS

Manufacturers wanted to make silverware chests for large silverware firm. Annual potential chest volume $250,000 to $500,000. For now or post-war. Box 259, Modern Packaging.

### HELP WANTED MALE

Wanted Packaging Engineer, familiar with all types of packaging machines and packaging materials. Good education and agreeable personality essential. Reply Box 261, Modern Packaging, giving brief résumé of experience and salary desired.

ENGINEERING LEADER is needed by large and well known manufacturer of automatic production machinery. We contemplate organization of a new Engineering group to work on the development of new and outstanding production machinery for the many problems in packaging and material handling requirements of all industry. We would like to hear from men with engineering experience capable of directing design and development in these and related fields. Please submit a summary of your training and qualifications to us. High salary and responsibility. All replies confidential. Box 262, Modern Packaging.

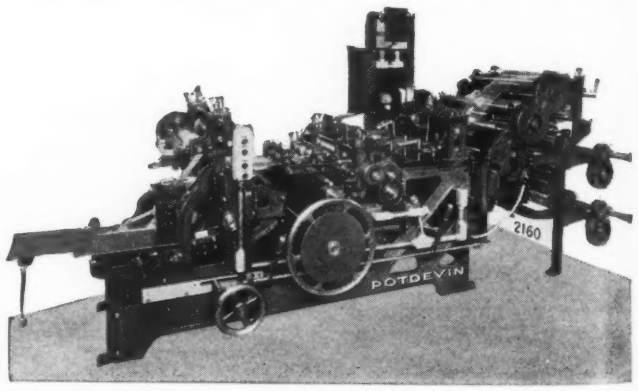
WANTED—OFFICE MANAGER, 30-45, with some paper buying and bookkeeping experience. Good opportunity with large progressive paper firm. State full particulars including salary expected. Box 264, Modern Packaging.

As its contribution to orderly re-employment, MODERN PACKAGING will print free of charge in its "Positions Wanted" classification, one ad, not to exceed 20 words, for each honorably discharged veteran of the armed forces of the United Nations who has had previous packaging experience.


# POTDEVIN

## CELLOPHANE BAG MACHINES

produce single-wall or "duplex" bags that resist side-splitting and top-splintering; bags with projecting lip—easily opened for filling. The new POTDEVIN pinch cut-off makes an elliptical or straight lip with smooth edges. Several other exclusive features and POTDEVIN bag machine patents make this possible.




PMC 2160. POTDEVIN Model 111-C adjustable range flat and square cellophane bag machine complete with electric eye-operated compensator for converting plain or pre-printed material. FLAT bag range 3" × 6½" to 10½" × 16¼".

## POTDEVIN MACHINE CO.

1244—38th Street Brooklyn 18, N. Y.
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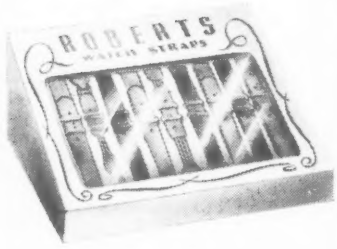
# VUEPAK

IN PACKAGES ENTIRELY OF CLEAR, TRANSPARENT PLASTIC

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IN EFFECTIVE COUNTER OR WINDOW DISPLAYS

## How to give a postwar product that "luxury look"... at mass market costs

BEFORE the war it cost a little more to package a product in rigid, transparent Vuepak than conventional materials... but it added many a dollar to the sales of many a product ranging from bath towels to grass seed, baby shoes to girdles.

After the war it will continue to cost a little more... but the extra sales appeal of a product revealed yet protected by Vuepak will be more important than ever in keenly competitive postwar markets... and the slight extra investment in packages or displays with a "luxury look" will more than pay out in mass market sales!

Vuepak is famous in the packaging industry for its clear transparency, sturdy toughness and sleek, flawless finish. It is easily custom designed yet mass-fabricated. It takes printing or embossing readily.

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*Whatever* your postwar products will be, whatever your postwar packaging problems, there is probably a Monsanto Plastic that can help add new sales appeal, provide increased protection or reduce packaging costs.

The broad family of Monsanto Plastics is one of the largest and most versatile groups of plastics offered by any one manufacturer. In addition to rigid, transparent Vuepak, it includes five different, basic types of molding compounds... vinyl acetal, heat-sealing coating compounds and films... and two different, basic types of thermosetting resins used as adhesives and as impregnants for paper.

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The broad and versatile Family of Monsanto Plastics includes: Lustron polystyrenes • Cerex heat resistant thermoplastics Vynate vinyl acetals • Nitron cellulose nitrates • Fibestos cellulose acetates • Resinox phenolics • Resimene melamines. Forms in which they are supplied include: Sheets • Rods Tubes • Molding Compounds • Industrial Resins • Coating Compounds • Vuepak rigid, transparent packaging materials.

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VUEPAK TRANSPARENT PACKAGING MATERIAL

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